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USSR Report

TRANSPORTATION

No. 33

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MOTOR VEHICLE

UKRAINE'S ROAD CONSTRUCTION MINISTER CITES ROAD REPAIR FIGURES

Kiev RADYANS'KA UKRAYINA in Ukrainian 22 Nov 80 p 2

[Article by M. Shul'gin, UkSSR minister of Construction and Utilization of Roads: "From Congress to Congress. At the Intersections of Roads"]

[Text] On 1 October 1980 the road workers of the Ukraine submitted an official report on the completion of the 10th Five-Year Plan. A total of 16,988 kilometers of highways were reconstructed and introduced into use. This represents 247 kilometers more than had been anticipated. The sum of 1.602 billion rubles was invested.

It is necessary to state that collectives of road repair and construction organizations and enterprises, after having engaged in broad competition for the timely implementation of the guidelines of the 25th CPSU Congress completed the objective of the five-year Plan regarding the growth of work productivity within 4 years.

Today in the republic, motor-vehicle highways with a hard surface comprise 81.2 percent of the total length of roads. This amounts to 132,800 kilometers. Thus, a reliable support network of highways of all-union and republic significance has been established.

Roads of local importance are also developing well. During the past 5 years in accordance with engineering plans, hard-surfaced access roads to 556 central farmsteads of collective farms and state farms have also been constructed. This responsible matter has been essentially completed in 22 oblasts of the republic.

Increases in the volume of materials transported, intensity of traffic, and the growing weight capacity of vehicles lead to the premature wearing-out of highways. Therefore the road workers of the republic paid particular attention to road improvement. As a result of reconstruction and capital repair, the structure of roads has changed qualitatively: in the Ukraine today there are now close to 500 kilometers of category-I highways, while the extent of category-II roads has increased considerably.

Genuine improvement in the indicators of our work and in the growth of scientific and technological progress was enhanced in this industry by the changeover to a three-tier system of management. The economic independence and the responsibility of highway organizations for results in production and economic activities were increased; specific production and management functions were centralized; the productive base of individual enterprises was strengthened, while questions concerning the use of local materials are being successfully resolved; and new technological procedures are being more rapidly introduced. All this has had a positive effect on the rate of growth of labor productivity and on the profitability of production.

Success in our work during the 10th Five-Year Plan was determined by the introduction of cost accounting at all levels of management, as well as by the introduction of team contracts in construction and repair projects. The entire highway economy went over to new methods of planning and economic stimulation.

The last year of the 10th Five-Year Plan was for us a year of intense and critical work. At the time of preparations for the Olympic Games the collectives of this economic realm engaged in massive work in the reconstruction and capital repair of roads along which sportsmen and tourists from abroad traveled. It is sufficient to state that the expanse of Olympic routes in the republic amounted to 4,330 kilometers, of which 1,150 kilometers formed the route of the Olympic flame. These roads were well prepared.

This year the party and government obligated the ministry to underwrite the construction of automobile roads in Tyumenskaya Oblast. This is a great and responsible task. To implement it, first of all, it was necessary to select personnel carefully; to form a trust and enterprises; to allocate resources; to prepare a material and technological base; to set up housing, and to arrange for dining facilities. We dispatched seven expeditions to the oil-bearing region and our subunits are already functioning in the Tyumen area. Within 3 years we are to bring into use more than 100 kilometers of roads.

Without doubt the creative labor of workers was and remains the reliable foundation for the timely completion of the state five-year plan as fixed by its basic technical and economic indicators. The collectives of the Poltavskaya, Kievskaya, Donetskaya and Rovenskaya oblast road-construction enterprises, the Zaporozh'e road construction trust, the Motor Vehicle Road Directorate Nr 10, and the management of the Pervomaisk Special Quarry were the first to begin competition for beating the deadlines set down in plans for the completion of projects. They were supported by all collectives in the industry.

The results of such intensive work are amply visible from the example of the Cherkasskaya Oblast Production Administration for the Construction and Utilization of Highways, the workers of which were among the first to seize the patriotic initiative.

Back on 10 August the collective of that administration reported on the completion of the five-year plan. The Cherkassy workers brought into being 54.4 kilometers of new roads above and beyond the five-year objective and repaired 70 kilometers more than the plan called for. All central farmsteads of collective farms and state farms in the oblast are joined together by roads and access routes with a hard surface. Currently, well-appointed roads to all planned future populated points are under construction.

In the beginning of the year, the Cherkasskaya Oblast Highway Construction Trust introduced an overall self-contained system for controlling the quality of work.

As a result, of 113 kilometers of roads built in 1980, 110.4 kilometers were completed with evaluations of "excellent" and "good," while for 13 important work projects warranteed certificates of quality were issued.

In the oblast the five-year plan on measures to assure traffic safety was completed in 4 1/2 years. A total of 1,224 kilometers were marked as passing zones; close to 11,000 signs were changed; 140 kilometers of sidewalks were built; 85 stations for passengers were constructed; and almost all wooden bridges were converted into permanent structures. The collective of the oblast highway construction trust, in a successful and comprehensive manner, is now engaged in resolving the tasks in its plan for social and economic development.

The highway workers of the Kiev area also work well. The economic plan of the 10th Five-Year Plan and the socialist obligations taken upon themselves regarding the construction and repair of hard-surfaced highways have been completed a half-year before the deadline. The collective of the Kievskaya Oblast Road Construction Trust emerged many times as the victor in all-union socialist competition and was awarded the Challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Central Committee of the Komsomol.

These work achievements were attained by the highway workers of the republic because of active assistance and support from local party and Soviet organizations.

By means of weighty labor gifts, the majority of highway collectives are preparing to greet the 26th CPSU Congress. The road construction trusts of the Kharkovskaya, Krymskaya, Khmelnitskaya and Ternopolskaya Oblasts, the republican associations "Ukrshlyakhbudindustriya," "Ukravtoshlyakh," "Ukrshlyakhbud," Ukrmahistral" and "Ukrshlyakhzv'yazok" have taken upon themselves additional socialist obligations with regard to bringing important projects into operation. The industry is proud of such collectives.

The road workers of the Ukraine carry high the banner of socialist competition. Active part in its realization are taken by local party, trade-union and Komsomol organizations. Trailblazers in this competition include experts in their own fields, specialists with high qualifications, people with an exalted feeling of workers' pride and of responsibility for their own work and for the work of the collective. The names of the frontrunners of production, our beacons, are known throughout the republic today. These Heroes of Socialist Labor include the operator of a scraper-excavator I. Kretinin; the machine operator and operator of a motor grader A. Prokhorov; the machine operator and excavator D. Balalayev, who is a recipient of the Order of Lenin; the machine operator and tractor loader P. Grishkin, a recipient of the Order of the Labor Red Banner; the machine operator and mixer of asphalt M. Belan; the machine operator and operator of a motor asphalt sprayer M. Stebnovskiy; the tractor driver D. Konoplitskiy; and the skilled craftsman P. Kosenko.

Of course, not all names, not all collectives, can be enumerated here. But to all of them we give a tribute of esteem and respect. In the ministry a Book of Labor Glory is maintained. Into it there have already been inscribed 112 labor collectives from all branches of the economy involved.

At the present time, reports arrive each day at the address of the ministry with the message "The five-year plan has been completed in time!" So report the working subunits. There are now more than 150 such reports. This eagerness, this striving for socialist competition, this wave of enthusiasm and patriotic exaltation, gives joy and instills the conviction that new heights will be taken, that new labor achievements lie before us.

Laborers, engineering and technical workers and administrative employees in the industry have taken upon themselves heightened socialist obligations--to build no less than 150 kilometers of highways in addition to the goal set by the annual plan by the end of the year, the costs to come from already allocated reserves. We are preparing this labor gift for the 26th Congress of our party.

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TECHNICAL PROGRESS IN AUTOMOTIVE INDUSTRY

Moscow AVTOMOBIL'NAYA PROMYSHLENNOST' in Russian No 11, Nov 80 pp 1-3

[Article by V. A. Faustov, candidate of technical sciences I. B. Koltunov, and Ye. A. Ustinov, Ministry of the Automotive Industry, GPZ-1 [State Bearing Plant No. 1]: "In the Interests of Technical Progress in Auto-Making"]

[Text] During the Tenth Five-Year Plan enterprises and organizations in the automotive industry did a great deal of work to carry out the instructions of the 25th CPSU Congress on the necessity for further development of scientific research, accelerated and broad introduction of research results into the national economy, and intensification of science's ties with production. The basic trends of this work in the sector were creation of high-capacity automotive equipment for various sectors of the national economy, especially for heavy industry and agriculture (powerful dump trucks, prime movers, multiaxle vehicles); dieselization of the vehicle inventory, creation of tandem trailer trucks and specialized types of vehicles; improvement in the technical level and the qualitative and operational indicators of vehicles and other products manufactured; creation of new, more progressive technological processes on the basis of integrated mechanization and automation of production, including low by-product technology; introduction of industrial robots to replace the hard labor of blacksmiths, punchers, and the workers in forge and press production; reduction in manual labor in assembly, freight handling, and storage operations through mechanization of these operations; introduction of computer equipment to optimize the control of technological processes; creation of automated sections by using machine tools with numerical preset control; solution of problems of conserving metals and replacement of the latter by non-metallic materials; development and introduction of electron beam and plasma technology in manufacture of precision components, of electroslag remelting, obtaining components based on the use of pulsed loads, and so on.

Scientific research and project planning and design formulations in line with these trends are underway and are being introduced into production. All of the sector's basic enterprises made agreements on scientific and technical cooperation with institutes in other sectors, academic scientific institutions, and VUZ's. This cooperation is facilitated by the purposeful activities of sectorial research institutes and the design and project planning organizations, which insure the integration of science and production and of the technological and design elements of enterprises which are the conduits of technological progress in production.

Rich know-how in scientific and technical cooperation with research organizations has been accumulated at the Moscow Automobile Plant imeni I. A. Likhachev [ZIL]. The economic impact of introduction of various scientific findings at this plant during the 9th Five-Year Plan exceeded R30 million. During the Tenth Five-Year Plan the framework of the cooperation among scientists and ZIL production workers expanded considerably. Based on integrated, long-term agreements, today ZIL cooperates with more than 100 scientific organizations and VUZ's, solving with them important automaking problems.

Scientists from the Chemical Physics Institute, USSR Academy of Sciences, in cooperation with ZIL specialists, developed a design of a new engine with precombustion chamber-spray ignition and they developed a new diesel in conjunction with NAMI [Central Order of Labor's Red Banner Scientific Research Institute of Automobiles and Automobile Engines]. A great deal of work with various institutes participating is done in the area of developing progressive technological processes, materials, and equipment. Work is underway with the Ukrainian SSR Academy of Sciences in the area of welding metals and the technology of no-waste production.

ZIL cooperation with MGU [Moscow Order of Lenin and Order of Labor's Red Banner State University imeni M. V. Lomonosov] provides results, especially in development of new technologies, control and measuring instruments, lasers, methods for testing automobiles and units, and calculations on durability. The same can be said also about the ZIL collectives' cooperation with Glavmosavtotrans [Main Administration of Motor Vehicle Transportation of the Moscow City Soviet] and NAMI aimed at raising cargo vehicle operating life without a major overhaul to 350,000 kilometers--work which comrade L. I. Brezhnev, CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium Chairman, rated highly.

The technical level of production at the Gor'kiy Automobile Plant [GAZ] noticeably increased thanks to close and creative cooperation among production workers and scientific collectives. Joint scientific inquiry with more than 40 academic, scientific, and sectorial institutes helps this collective increase product output, improve product quality, and increase vehicle reliability and operating life without a major overhaul. Plus, the high level of component standardization and typification of technological processes permits assimilation of an uninterrupted conversion of production from output of one automotive model to output of another.

The collective at the Volga Automobile Plant imeni 50-letiya SSR [VAZ] also developed stable, creative ties with the country's scientific research and project planning and design organizations. This includes NIIATM [Scientific Research Institute of Motor Vehicle and Tractor Materials], NAMI, NIITavtoprom [Scientific Research Institute of Technology of the Automotive Industry], the Institute of Arc Welding imeni Paton, the Tol'yatti Polytechnical Institute, and many others. A great deal of serious work is underway jointly with them to create new models of high-capacity equipment, and to improve extant equipment, technology, and design of automotive assemblies and components. For instance, following the corresponding research, workers from the Voroshilovgrad Machine Building Institute and from the plant's technical services developed, manufactured, and introduced into metallurgical production electromagnetic systems for automatic elimination of ferromagnetic circuits from the flows of a molding compound. Work also was done with Plastpolimer NPO [Scientific Production Association] (Leningrad), NIIPM [Scientific Research Institute of Plastics] and NIIATM (Moscow) to develop materials, manufacturing technology, and introduction into production of a unitized molded piece of vehicle roof upholstery to replace the one fused out of polymer film. The Kuybyshev Polytechnical Institute recommended the introduction into production of processes for the precision sharpening and diamond polishing of tempered steels and nonferrous alloys with a tool made of superhard synthetic materials. Introduction of foundry facing roofs developed by VNIILitmash [All-Union Scientific Research Institute of Foundry Machine Building, Technology, and Automation] for repair foundries in metallurgical production has an annual economic impact worth R100,000.

A new, very effective form of science's cooperation with production appeared at the BelavtoMAZ Production Association: a department for cargo truck problem-solving research was created on the voluntary service principle at the Minsk Automobile Plant [MAZ] jointly with the Belorussian SSR Academy of Sciences. The economic impact from introduction of the results of the research this department did during 4 years of operating life without a major overhaul exceeded R35 million. Therefore as early as May 1979 scientists and production workers created (also on the voluntary service principle) the Avtofiztekh NPO, made up of specialists from technical and physical mathematics institutes in the Belorussian SSR Academy of Sciences and enterprise production workers. This NPO is tasked to assist enterprises in the area of improving automative designs and their manufacture.

A collective agreement on scientific and technical cooperation among Avtodizel' Production Association, MAZ, Automotive Combine No. 1 and Automotive Repair Plant No. 1 in Glavmosavtotrans, NAMI, and MADI [Moscow Highway Institute] aimed at improving the reliability and longevity of MAZ vehicles with YaMZ [Yaroslavl' Engine Plant] engines also plays a fruitful role here. Today these vehicles have an operating life without a major overhaul of 300,000 kilometers; the economic impact from realization of the measures contained in the agreement during the Tenth Five-Year Plan was about R500 million. Labor costs for maintenance of each vehicle were reduced 20 percent (computed per 1,000 kilometers of operating life).

Work has been done at MAZ jointly with the All-Union Scientific Research Institute of Hard Alloys [VNIITS] to introduce the defectoscopy of a cutting tool's hard alloy blades and a defectoscopy methodology is being developed for hard alloy blades as they are sorted based upon their electromagnetic properties. Based upon an agreement with NIITavtoprom, work is in progress to develop and manufacture mechanized and automatic monitoring devices for cylinder blocks, crankshafts, connecting rods, bushings, and other components.

Business-like contacts among plant technologists and the collective from the All-Union Scientific Research, Design, and Technological Institute of the Bearing Industry [VNIPP] turned out to be useful and resulted in the development and manufacture of a number of instruments used on honers and grinders.

The development and testing of new types of threading tools of improved durability and accuracy for the formation of internal threads proceeded jointly with specialists from the Chelyabinsk Design and Technological Institute of Automation and Mechanization in Auto-Making. A design was developed and production tests made on 13 type sizes of taps with a new type of neck. The durability of the newly designed taps on the average increased 29 percent. They have been recommended for introduction into production.

Creative cooperation continues among plant technologists and specialists from EKTIavtoprom [Experimental Design and Technological Institute of the Automotive Industry]. Last year the technology was developed for drying components when preserving spare parts by using a water-displacing compound.

Great attention is being placed at the Zaporozh'ye Automobile Plant [ZAZ] Kommunar on creative work with scientific research and educational institutes, especially in tool production. Fruitful work is underway jointly with the Experimental Scientific Research Institute of Machine Tools (ENIMS) on the theme "The Technology of Electropulse Processing of Large Drawing Dies Using Galvanized Copper Electrodes." The essence of the method is that an electrical charge arising as current passes through a dielectric medium is used to destroy the removable layer of metal. Here the section of the copper electrode is copied exactly on the processed component. This method widely is used in the processing of complex shaping matrices on large compression molds and medium dies.

The theme "Hydroextrusion of Cutting Tool Blanks of High-Speed Steel" also was worked out by plant specialists jointly with the Donetsk Physical and Technological Institute in the Ukrainian SSR Academy of Sciences. The result of the introduction of this theme was blanks with straight and spiral teeth, as well as the capability to pressure transfer them from a large diameter to the required small diameter. This made it possible to increase the durability of the cutting tool and to reduce the expenditure of very scarce high-speed steel.

Jointly with scientific research institutes, ZAZ Kommunar also intends to introduce many other formulations into tool production: improvement in cutting tool durability through carbonization, use of machine tools with numerical preset control, lasers, and so on.

GPZ-1--one of the oldest enterprises in domestic bearing production--can serve as an example of science's close cooperation with production. The plant annually cooperates with more than 30 scientific organizations, many for several years now and some even for decades (VNIPP, VNIIMetmash [All-Union Scientific Research, Planning, and Design Institute of Metallurgical Machine Building], with the plant higher technical training institution attached to ZIL, the Moscow Power Engineering Institute, the Moscow Automotive Mechanics Institute, the MVTU [Moscow Higher Technical School] imeni N. E. Bauman, the Leningrad All-Union Scientific Research Institute of of High Frequency Currents imeni Vologdin [VNIITVCh] the Moscow Machine Tool Institute, the MGU imeni Lomonosov, and others).

Close ties with scientific organizations became an organic necessity for the plant. They make it possible to solve serious scientific problems which crop up during a fundamental improvement in production equipment and technology, such as improvement in the technology of manufacturing blanks for rings, balls, and rollers which insures a considerable reduction in metal consumption, a significant increase in blank precision, an improvement in the productivity and working conditions of the workers, and a reduction in the labor intensity of manufacturing components in subsequent mechanical processing operations. The plant in and of itself would be unable to solve these problems since the volume and depth of research involved therein would require calling in well-known specialists in various fields of scientific and technical knowledge.

Among such tasks are creation and introduction of new, progressive processes of hot helical rolling of large 1-2" diameter balls and then also of massive series of bearing rings on newly-created special rolling mills (now the volume of rolling these components exceeds 20,000 tons per year), which made it possible to increase labor productivity by a factor of 5-8, reduce metal consumption 10-15 percent, and achieve an annual economic impact of almost R1 million.

This all was achieved thanks to the initiative of VNIIMetmash scientists and the help of many other scientific organizations, in particular the Leningrad VNIITVCh imeni Vologdin, which directly participated in creation of powerful induction heaters for rolling mills.

This important work continues even now. The plant jointly with VNIIMetmash completed fundamental reconstruction of two rolling mills for rolling blanks for bearing rings, which made it possible to increase the production capacity of these mills almost 33 percent, as well as improve the quality of the blanks. It also permitted the plant to achieve not only a reduction in labor intensity in mechanical processing operations, but also a further increase in the longevity of the bearings due to the more compact structure of the rings obtained during the cross hot rolling.

The work the plant did in conjunction with VNIITVCh imeni Vologdin also was not limited only to creation of installations for heating with high frequency currents prior to rolling. Similar installations found wide use in various technological conversions, which allowed the plant to save more than R500,000 annually.

A series of new, original monitoring automatons to monitor and sort rollers and balls, which as far as specifications are concerned are on a par with the best foreign models, was developed and successfully introduced at GPZ-1 in cooperation with the Central Planning and Design Bureau for Mechanization and Automation (TsPKBMA, Riga) and the Riga Polytechnical Institute. In recent years 57 similar automatons in three models were created and introduced into production, resulting in a total annual economic impact of R300,000.

A PUSK-77 installation for vacuum plasma spray coating of a cutting tool was manufactured in cooperation with NIITavtoprom at GPZ-1 and it is operating successfully. This insures a considerable increase in its durability (by a factor of 2 or more). The annual economic impact from introduction of the new process exceeds R100,000.

At present experimental production of ball bearings has been set up on the basis of progressive technological processes in which shaped blanks are made by a forging from a bar and by rolling off, with further processing using high-capacity methods of rapid power polishing. This makes it possible to accomplish more extractions in short cycles. Also solved in experimental production were the problems of complete automation of assembly, packing, washing, and monitoring operations, high-capacity equipment new in principle and of higher precision was created, as were additional articles and materials (electric spindles on pneumatic supports with a capacity of up to 25kw and a frequency of rotation of up to $1 \cdot 10^5 c^{-1}$, wheels for high speed power polishing operating at 80 meters per second, diamond rollers, very efficient coolants, and so forth). The equipment has been supplied with non-contact control systems, devices to maintain a constant polishing speed, and high-speed active monitoring instruments. It is anticipated that, in comparison with extant automated lines for bearing production, labor productivity in the experimental automated production will increase by a factor of about 2 and consumption of scarce bearing steel will diminish.

It was necessary to call in almost 40 organizations from Minstankoprom [Ministry of the Machine Tool and Tool Building Industry] and from other ministries and departments, including 20 all-union and sectorial scientific research institutes and design bureaus, in order to solve all these scientific and technical problems.

The success of technical progress in the automotive industry of course depends not only on the organization of ties among enterprises and the scientific collectives in other ministries and departments. In the main success is determined by the activities of scientific research, experimental design, and planning organizations and by plant design and technological services and laboratories. Experience shows that sectorial scientific organizations, being specialized along the individual major trends in the development of automotive production, can solve the vital problems of modern auto-making. For example, during the 9th Five-Year Plan NIITavtoprom did about 300 studies for the plants in the sector. Jointly with the enterprises it introduced more than 120 new methods and progressive technological processes, 120 models of new technological equipment, and 15 automatic lines. Collective labor with the enterprises on the largest studies begins not at the introductory stage as was the case in the past, but at the stage where the new technology and equipment is developed. The institute is participating now in carrying out 33 agreements on scientific and technical cooperation with enterprises. A combination of economic agreements with those on scientific and technical cooperation has become the new form of cooperation and this creates conditions more favorable for increasing the effectiveness of the joint work. In particular economic agreements provide enterprises the opportunity to circulate new equipment developed by the institute in experimental production among themselves with active assistance from institute specialists.

The institute collective in recent years has been doing a great deal for introduction of new formulations on a sector-wide scale in accordance with integrated programs approved by the ministry. It strives to accelerate introduction of completed research into production practice in order, by strengthening the union between scientists and production workers, to convert NII and enterprise cooperation into collaboration.

The sector's other lead institutes also are doing considerable work to strengthen scientific and technical cooperation with enterprises. This includes NAMI, VNIPP, NIIavtopriborov [Scientific Research and Experimental Institute of Automotive Electrical Equipment, Carburetors, and Instruments], and many design and planning and technological institutes.

The 25th CPSU Congress listed acceleration of scientific and technical progress among the top priority problems. This places great responsibility on sectorial institutes and on enterprise and association design bureaus. It is their duty strictly to monitor progress in task accomplishment and to see to it that in-depth studies more rapidly are implemented. Research elements must continually watch over everything that is linked with increasing the effectiveness of science and with realization of its achievements, find new forms of contact with enterprises, and facilitate the creation of a purposeful, creative atmosphere in every collective. Here lies the guarantee of success for scientists and specialists who directly support the integration of science and production.

The decisions of the June (1980) CPSU Central Committee Plenum on convening the 26th CPSU Congress and the CPSU Central Committee decree "On Socialist Competition for a Worthy Greeting for the 26th CPSU Congress"--documents accepted with great patriotic and labor enthusiasm by the workers in the automotive industry, just like all the Soviet people--are an enormous stimulus in this work. Collectives from production, scientific, and design organizations are devoting their main attention to achievement of practical results and to implementation of the decisions of the 25th CPSU Congress, of the November (1979), June, and October (1980) CPSU Central Committee Plenums, and of the positions and conclusions contained in the reports and speeches of L. I. Brezhnev, CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium Chairman, on questions of the party's economic policy. They are attentively studying and implementing progressive know-how and the achievements of Soviet science and technology, thereby facilitating solution of the main problem--following all trends to complete annual plans and the five-year plan as a whole and to create a firm foundation for scientific and technical progress and development of the national economy during the Eleventh Five-Year Plan.

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MOTOR VEHICLE

MOTOR VEHICLE PLANTS IN BELORUSSIA

Moscow ZA RULEM in Russian No 11, Nov 80 pp 1-2

[Article by L. Firisanov, secretary of the Belorussian Communist Party Central Committee: "Via the Highways of Progress"]

[Excerpt] As is known, the 26th CPSU Congress levied the task of fuller and more timely satisfaction of the national economy's and the populace's shipment requirements, accelerated delivery of freight, and a considerable increase in the capacity and operating quality of the entire transport system.

A significant role in accomplishment of this vital national economic task belongs to the automotive industry, which is represented in the republic by 16 plants, 5 scientific, project planning, and design institutes, and 20 service stations.

Many residents of Minsk recall that soon after the city's liberation from the fascist occupiers, while the war was still in progress, construction began on a future automotive giant. Today the Minsk Twice Order of Lenin and Order of the October Revolution Automobile Plant [MAZ] is the lead enterprise in the BelavtoMAZ Production Association. The Belorussian and Mogilev automobile plans and four other enterprises compose it.

Since 1947 when the first MAZ was assembled, Belorussian auto-makers have produced hundreds of thousands of diesel motor vehicles and multiaxle off-road wheeled prime movers. They are to be found in the remotest corners of our country and on the roads of 50 foreign countries.

The association's party organizations are exerting great effort to accomplish the tasks assigned to the BelavtoMAZ collective in the "Basic Trends in Development of the USSR National Economy for 1976-1980" for production of dump trucks and tandem trailer dump trucks with a capacity of 75, 120, and more tons and a significant increase in motor vehicle technical level and in their qualitative and operational indicators.

At the present time more than 70 vehicle models and modifications, with capacities ranging from 8 to 110 tons, are in production; experimental design and scientific research work is underway on 54 models. It is important to note here that the preparatory periods for production of new models constantly are being reduced. They totalled 8 years for the MAZ-500 family of vehicles, slightly more than 3 years were required for conversion to production of the MAZ-500A family, while manufacture of the heavy MAZ-500V for intercity and international hauling was assimilated in just 1 year.

The association's capabilities to focus engineering resources on the main trends in improving the technical level of vehicles, introducing progressive technology, and developing production capacities further are used widely to accelerate the development and manufacture of automotive equipment. Introduction of an integrated product quality control system allowed the MAZ collective to certify vehicles for the state Quality Seal concurrently with initiation of their series production. Developing their experimental base, fortifying creative cooperation with academic, educational, and scientific research institutes, auto-makers continually are improving vehicle designs. As is known, the consumer provides the most objective evaluation of equipment quality. He knows all the vulnerable spots. Therefore, I would like to say a few words about the positive know-how in scientific and technical cooperation accumulated by Minsk auto-makers, Yaroslavl' engine builders, and by operators from Automotive Combine No. 1 in Glavmosavtotrans [Main Administration of Motor Vehicle Transportation of the Moscow City Soviet] and the Belorussian SSR [BSSR] Ministry of Motor Transport. The agreement among them became a powerful stimulus for the collectives' socialist competition to improve the quality, reliability, and longevity of MAZ vehicles. Today it is possible to talk about what it gave the national economy. The average run for the base vehicle prior to major overhaul increased in 10 years from 160,000 to 300,000 kilometers. Increasing this indicator to 350,000 kilometers, as know-how accumulated by the best drivers in Glavmosavtotrans and Belorussia's motor pools showed, became a completely realistic task which, one would presume, will be solved successfully rather soon.

Moreover, party organizations in the association's enterprise are placing great attention on increasing the efficiency of production and the quality of the work of each executor and the level of technical upgrading of shops and sections, on solution of social problems, and on formation of a healthy psychological climate in the collective.

Glorious labor traditions have taken shape in the association. The entire republic knows the names of Heroes of Socialist Labor D. I. Barashkin, K. G. Pavlenkovich, M. P. Yakubovich, and V. V. Kulinchik. There are 36 laureates of the Lenin and ofthe USSR and BSSR State prizes working at the Minsk Automobile Plant alone. Hundreds of production front-runners have been awarded orders and medals. It is fine that youth uses the veterans as a worthy example.

Preparing for the 26th CPSU Congress and on the doorstep of the 11th Five-Year Plan, Belorussian auto-makers have adopted new goals for themselves. I list just a few of them. The association's collective is faced with increasing the output of motor vehicles considerably. It is tasked to assimilate production of tandem trailer trucks with a 3-axle 32-ton semitrailer as well as of 40-ton container carriers. This promises the national economy great advantages, the main one being a radical increase in shipment volume while releasing drivers. The country's oil and gas workers will receive multiwheel off-road truck tractors and dump trucks. Experimental consignments of self-propelled vehicles for fertilizer spreading and car trailers will be manufactured. Work will continue to improve the design of 27-, 40-, 100-, and 180-ton vehicles and the production of 70-ton dump trucks will increase.

Series production of 11 cubic meter scrapers will be assimilated and production of 22-ton full drive dump trucks for the underground mines in ferrous metallurgy will be expanded at the Mogilev plant during the new five-year plan. Manufacture of trailers and semi-trailers for tandem trailer trucks and container carriers is planned at the Osipovichi vehicle assembly plant. Product output will grow significantly also at the Minsk Motorcycle and Bicycle Plant.

Those who operate this equipment--automotive transport workers--also are faced with many complex tasks. The motor vehicle long ago became an integral and absolutely irreplaceable element of the production process practically speaking in all sections of the national economy, while automotive transport itself has acquired all the traits of an independent sector.

Our common-user motor pools now serve some 6,000 enterprises and organizations, daily moving an average of more than 1.5 million tons of freight and 4.3 million passengers. During this five-year plan freight turnover increased 28 percent, freight shipment volume 18.8 percent, and passenger turnover 23.8 percent. Work done by the BSSR Ministry of Motor Transport to improve the forms and methods of organizing equipment maintenance, repair, upkeep, and operation to a great degree facilitated this. Creation in the sector of the Avtotranstekhnika Production Association made it possible to combine the efforts of scientists and production personnel to increase the technical level of auto enterprises' repair base and significantly to improve repair quality and labor culture in every motor pool. The association is made up of scientific research organizations, design bureaus, and experimental production.

For example, one of the association's significant achievements in recent years was creation and introduction of so-called standard, mechanized complexes for replacement of vehicle assemblies. In essence these are combines equipped with various attachments for removal and attachment of units and assemblies. During the period from 1973 through 1979 more than 500 standard, mechanized complexes have been introduced at Belorussia's automotive enterprises. This made it possible to increase the labor productivity of repair workers doing basic operations by a factor of 3-4, and of no less importance, to change qualitatively the nature of the labor processes, having ruled out operations performed by using great physical efforts. On the average the labor intensity in vehicle maintenance and major overhauls dropped 25 percent in the sector.

The republic's auto workers actively joined in the competition to increase the run between major overhauls for the MAZ vehicle family. Last year 83 percent of all who drove these vehicles and about 2,000 repair workers participated in this movement, resulting in a savings of R233,000 worth of spare parts, R129,000 worth of diesel fuel, and R355,000 worth of tires. Examples of a thrifty, careful attitude towards equipment are Minsk drivers M. A. Dovnar and I. P. Skorobogatyy, Polotsk driver V. B. Khudotkin, Rogachev driver I. A. Ivanchikov, and hundreds of other vehicle drivers. The Avtotranstekhnika Production Association made a large contribution to improvement of automotive transport operations. An automated transport control system has been introduced in the sector. Progressive forms of freight delivery and passenger movement and brigade contract in movement of outsize freight have been widely disseminated.

Our party always looked and looks upon reinforcement and development of the Soviet economy in immutable connection with strengthening the defensive might of the Soviet state, with an increase in the technical and combat readiness of the armed forces, with the indoctrination of our people and our youth in a spirit of Soviet patriotism and proletarian internationalism, in a spirit of readiness to defend the Soviet fatherland. An important role in this national affair falls to the Voluntary Society for Cooperation with the Army, Air Force, and Navy--USSR DOSAAF.

Availability of a modern technical base and a large detachment of highly-qualified specialists created good conditions and the prerequisites for mass training of driver cadres and for automotive transport development. The accomplishment of defense and national economic tasks is intertwined in the activities of DOSAAF organizations in Belorussia, just as in other republics. More than 325,000 drivers for the national economy were trained in DOSAAF automotive and technical schools and clubs during the years of this five-year plan alone. Tasking to train driver cadres in the republic has been included in the national economic plan. This approach, first, provides a precise perspective for at least 5 years and, second, improves the supply of equipment and tools to training organizations.

The intent for the forthcoming five-year plan is further expansion in the network of technical sports clubs. They will be set up in all cities and rural areas of the republic. This will increase even more the capabilities of DOSAAF to train the drivers so needed by the armed forces and the national economy. It is important to underscore that young people acquire not only an interesting and useful profession in DOSAAF schools and clubs. Great indoctrinational and military-patriotic work is carried out there also, evenings and gatherings are held with war and labor veterans and with progressive production workers; youth gets involved with automotive sports and successfully pass the GTO [Ready for Labor and Defense] norms. Greater stress is being devoted in driver training to the qualitative aspect of the matter since, to a large degree, traffic safety on the road, freight and equipment care, and labor productivity depend on this.

Road construction is expanding unabated in the republic. More than 2,500 kilometers of road were built and about 8,000 kilometers underwent major repair in 4.5 years of the 10th Five-Year Plan. A visible example is the Minsk-Brest Highway now being built. However, we cannot be satisfied with the rate of construction of these roads.

The recent CPSU Central Committee and USSR Council of Ministers decree on improvement in the construction, repair, and maintenance of roads obliges local organizations to do a great deal. We must exert maximum efforts to insure that the 11th Five-Year Plan becomes not only a period of further technical progress in the automotive industry, not only a time to improve automotive shipments, but also years of further development and improvement in the republic's road network.

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MOTOR VEHICLE

PLANNING ROLE OF MINSTROIDORMASH

Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 80 p 11

[Article by V. Vavilov: "Planning Requirements Outlined at Minstroidormash Party Organization Meeting"]

[Text] The enterprises involved in fabricating building, road, and communal machinery produce over 2,000 different machines and equipment items and at the same time deliver to the trade network 460 consumer-goods and household-appliance items. During the Tenth Five-Year Plan this industry has met each year the planned sales targets and the goals with regard to introducing new techniques and improving labor productivity. These facts were reported at the "report and election" meeting of the Party organization of Minstroidormash [Ministry of Construction and Road Machinery Building].

But most attention in the report of the Party Committee and in the discussions was concentrated on the deficiencies in the activity of the Ministry staff and on the critical problems resulting from the decisions of the October (1980) Plenary Session of the CPSU Central Committee. At this session the present status with regard to quantity and quality of many types of road and construction machinery products was evaluated as being far from satisfactory.

The contribution of the individual subdivisions to the overall Ministry operating results has been uneven. Thus, 22 of the All-Union Industrial Association enterprises did not meet the 9-month goals set for the current year. Still more enterprises are not meeting their goals with regard to the range of articles produced. The expansion of intermediate product output is behind schedule and because of the casting and stamping shortage troubles are developing in the machine shops.

The Communist Party members presented self-critical reports at the report and election meeting. They pointed out that the Party Committee of the Ministry has placed on the agenda many urgent questions and has made many decisions, but the established goals have not always been reached. Among the reasons are the vagueness and superficiality of the directives. The following example was cited. The Party Committee discussed the question of the efforts of the Communists on the production board of the Ministry related to improving the situation in the intermediate-goods shops. Nearly two thirds of the directive was occupied with discussion of the positive factors, while very little space was devoted to analysis of the deficiencies and the measures planned for their elimination. This practice does not contribute to broadening the sphere of Party influence in improving the activity of the Ministry staff.

Another significant deficiency was pointed out at the meeting. For example, the Party Committee at one time examined the question of the operation of the Party Bureau of Soyuztsemmash [All-Union Industrial Association for Cement Machinery Building]. However, the Communist Party members present were only informed of the decision taken and did not discuss it in detail.

Naturally, there have been many positive aspects in the work of the Party Committee during the 2-year period being reviewed. The reports presented by the Communist Party members at the Party Committee meetings, the sessions of the primary Party organizations, and the general Party meetings have been highly rated. The organization in the staff groups of competition on the basis of personal creative plans has been improved. The Party Committee has participated actively in the personnel selection and assignment process. More than 30 Minstroidormash specialists have been advanced to responsible posts in the central planning and accounting organizations during the review period.

The ideological and educational effort has been considerably accelerated and its level has been raised. The ideological commission has started to operate more effectively.

It was noted that the academic year in the economic education system started in a more organized fashion. In this regard a well-prepared study center played an important role.

A serious discussion was held at the meeting on improving employee discipline and personal responsibility. Some of the management staff in the All-Union Industrial Associations and the functional subdivisions are not sufficiently demanding in their approach to their work and tend to go along with the existing deficiencies. This is one of the factors behind the failure to meet the plans with respect to several aspects of the detailed product plan. Twenty-six of the production associations and plants did not meet the 1980 9-month goals with respect to consumer goods output.

Minstroidormash has been assigned an important role in expanding production of mechanized construction tooling in the USSR. This is a major potential reserve for improving labor productivity at the construction sites through elimination of manual operations. Definite improvements have been achieved by the machinery builders. However, if the Minstroidormash workers responsible for this matter worked harder and involved themselves more closely with the problems of increasing mechanized tooling production output and if the Party Committee imposed on them more consistent requirements the results would be far more significant.

The speakers at the meeting emphasized that it is necessary to intensify the organizational efforts of the Ministry and reinforce these efforts with unrelenting verification of their execution. The Ministry staff has long been content with the favorable numbers in the enterprise reports on electric power and fuel consumption. Therefore the failure to meet the goals with regard to conservation of fuel and energy resources during the first three quarters of 1980 was quite unexpected.

Thirty-four enterprises were checked and at 30 of them an unsatisfactory pattern of electric energy, steam, and heat consumption was found. The investigation was not conducted by the industry staff but rather by Gosenergonadzor [State Inspectorate for Supervision of the Power Industry] and the latter found the sources of the losses. The Ministry was left with no alternative other than belated initiation of improvements in the energy management of the enterprises.

This case (reported at the meeting) is an object lesson for the Communists and all the workers of the Ministry on the fact that they cannot permit the slightest slackening in making certain that the goals are met.

The meeting turned considerable attention to participation of the Minstroidormash Communists in improving the economic mechanism.

Extensive organizational and practical steps were taken. In nearly all the production associations and plants detailed schedules were prepared; they will be further refined on the basis of the data of the 1980 annual report. Most of the projected new wholesale price lists have been prepared. The last four price lists are still to be presented to the USSR Goskomtsen [State Pricing Committee].

As of 1 January 1981 Soyuztsemmash and all its enterprises will change over to planning and evaluation of their work on the basis of net normative output. Up till now the fund for paying the industrial and production personnel in terms of rubles of commercial output has been projected on an experimental basis only at a few enterprises. As of the first of the year this index will be introduced throughout the industry. It was pointed out at the October (1980) CPSU Central Committee Plenary Session that the essence of the plan is to consistently and decisively implement the directive of the Party and government on improving the economic mechanism. The communists of the Ministry are called on to lead the way in implementing these measures in the industry.

In the course of the meeting several proposals were introduced relating to improving the work of the Party organization and ensuring unconditional fulfillment by Minstroidormash of the industry development plan during the first year of the 11th Five-Year Plan. These proposals were taken into consideration in the adopted resolution.

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MOTOR VEHICLE

HISTORY OF MOSKVICH PRODUCTION

Moscow ZA RULEM in Russian No 11, Nov 80 pp 2-4

[Article by V. Mel'nikov, general director of the Moskvich Production Association: ["A Half-Century of Auto-making"]

[Text] "Assembled vehicles come off the assembly line at the Moscow Automobile Assembly Plant imeni KIM [Communist Youth International] on opening day"--this was the caption for photographs on the cover of ZA RULEM, No. 20, November 1930. The photos were taken at a ceremony dedicated to this enterprise joining the ranks of the active.

The second year of our first five-year plan was in swing when the foundation of Soviet auto-making was laid; acquiring new life, the AMO [Moscow Automobile Company] was renovated, and construction of the GAZ [Gor'kiy Automobile Plant] and Bearing Plant No. 1 began. Then bearing the name Communist Youth International, our plant joined the ranks of socialist industry's enterprises.

A half century has passed. During that time the Plant imeni KIM travelled the path from an automotive assembly enterprise to a large, modern production association intended for production of about 200,000 cars per year. Today it produces more vehicles, by a factor of 7, then were assembled back then. It exports its product to many countries of the world and sends components to Bulgaria for assembly of the Moskvich. It developed the specifications used for production of vehicles in Izhevsk and engines in Ufa.

The history of our enterprise--a child of the first five-year plan--reflects the steady forward progress of all Soviet machine building--a colossal growth in the scales of its production, technical equipping, and level of the manufactured product.

In 50 years the plant has gone through four stages in its development, each of which in essence a rebirth. From 6 November 1930 and up to 1938 GAZ-A cars and GAZ-AA trucks were assembled here from components and units coming from Gor'kiy. The enterprise's second birth occurred in 1938-1939. It was completely renovated for production of the economy KIM-10, which came off the assembly line until the start of the Great Patriotic War.

After the victory over fascism the plant continued to produce peacetime items, but now on a new basis. Production volumes, the vehicle model, and even its name--Moskvich--were new to the plant. Thus began the enterprise's third stage, which in 1947 also brought a new name--the Moscow Economy Vehicle Plant MZMA.

Technology improved year by year, new models were assimilated, and vehicle output rose. The one-millionth Moskvich came off the assembly line on 18 May 1967. It became an important milestone on the plant's path of development, on the path of improvement in the professional proficiency of workers, technicians, and engineers. It took 14 years to produce the first 500,000 vehicles and only 6 for the next 500,000.

Soon after this momentous event, in November 1968, the plant was awarded the name of Lenin's Komsomol (AZLK) and it became the lead enterprise in the Moskvich Production Association in 1971. Joining along with it were the Avtoagregat Plant in Kineshma, with the Likhoslavl' Radiator Plant joining 5 years later.

Creation of the association saw great changes in the life of the AZLK. Basic renovation and upgrading of the plant--its fourth birth--were completed in the first year of the Ninth Five-Year Plan. A complex of new shops sprang up not far from the old area and extant shops were renovated. And, perhaps the capstone for all of this, the two-millionth Moskvich came off the assembly line at the new assembly section on 16 August 1974.

The production association's collective made a great stride forward during the 10th Five-Year Plan. It assimilated production of new models and modifications and implemented a complex of measures for further improvement in quality, reliability, and longevity, for technical improvement of our product, and, on 25 August 1980 shortly before the plant's 50th anniversary, a new boundary was attained--the three-millionth Moskvich was produced.

The continuous rise in vehicle production is the result of constant improvement in technology, broad introduction of mechanized and automated equipment, improvement in the level of production organization and control, and better qualified workers, foremen, technicians, and engineers. This also is a result of great organizational and indoctrinational work by party, trade union, and Komsomol organizations to mobilize the collective to solve ever more complex problems, to employ socialist competition, and to fulfill and overfulfill pledges made. Here are some growth figures. In 1947 we provided 1,500 vehicles, in 1957 it was 50,000, in 1967 90,000, and last year, 1979, more than 180,000! Overall for the first 4 years of the 10th Five-Year Plan, the AZLK produced 714,266 Model 2140 and 2138 Moskvich cars and their modifications. The association assimilated production for rural and remote areas of the Moskvich-21406 with a stepped-down engine, manufacture began of the manually-controlled Moskvich-21403 for war and labor invalids, and establishment of a service department is underway.

Naturally, we measure our production in ways other than just the number of units produced. We primarily evaluate its social significance, understanding that it mainly goes to satisfy the needs of Soviet laborers--workers, kolkhoz farmers, and the intelligentsia--for personal transportation, which helps them in their work, domestic life, leisure time, and sports. And all of this in combination serves the main goal proclaimed by the Communist Party--"Everything for the good of the Soviet Man!"

Vehicle production in the Moskvich Production Association is organized on the basis of broad cooperation. More than 150 enterprises provide assemblies and components for it--engines and transmissions, electrical equipment and instruments, springs, glass, rubber and plastic components, aluminum and pig iron castings. Moreover, 130 plants and factories supply metal and various other materials.

To show the scales involved, it is sufficient to say that the new AZLK territory, where the main assembly section and body production, galvanizing shop, and others are located, occupies 48 hectares in addition to 33.5 hectares for the old area housing the forge, foundry, heat and press shops as well as mechanical processing and tool and die production.

The engineering section with an area of 35,800 square meters, in which in accordance with modern requirements are envisioned all the conditions for the design of new models and the building and testing of experimental models, soon will go into full operation. The construction of a plant vehicle museum is also being completed.

As is known, the body of today's car comprises 50-52 percent of its mass. But this item plays the leading role on a vehicle not only due to materials intensity, but due to labor intensity also. Highly-efficient body production has been set up at the AZLK. The extant technological process was adopted considering the latest achievements in world auto-making and Renault know-how. Integrated mechanization and automation of the entire body manufacturing cycle is done by semi-robots and standard robots for welding in the medium of carbon dioxide and by pressure contact welding, mainly spot and projection. We widely use (500 units all told) high-speed multi-electrode welders, plus mechanized and automated overhead and floor conveyor assembly and welding lines.

Body anti-corrosion protection is considered a very important operational quality of today's car. For us this includes a number of processes which are done sequentially in a seven-chamber phosphating unit, on a special automated unit for using electrophoresis to apply the primer, and on a mechanized unit for applying the undercoating. Preparation of the body and its painting are done in automated rooms for electrostatic application of the second coat of primer and in final coat rooms. Pneumatic robots and special guns are used to apply the enamel to the surface of the body.

Body durability and longevity--the direct result of reasoned design development and improved technology--to a considerable degree facilitated the creation of the appropriate reputation of the Moskvich, both in domestic and foreign markets.

It should be noted in this connection that export of our vehicles began in 1949, more than 30 years ago. Their popularity abroad has grown since then and, by 1974, you could encounter the Moskvich on the roads of more than 60 countries of the world. You can judge the size of the demand for them in recent years just by the fact that in 1979 we exported 60,000 (i.e., about one-third of the annual production) Moskvich-2140, Moskvich-2138, and their modifications to such countries as Bulgaria, Hungary, Italy, Finland, Czechoslovakia, and Yugoslavia.

The good results demonstrated by the Moskvich in big international competitions, such as the rallies of the century--London-Sydney and London-Mexico, as well as the Tour of Europe and others, greatly facilitated interest overseas in vehicles bearing our trademarks. Plant sportsmen, entering their own pleasure, sports, and racing cars, have won the USSR championship 52 times. The entire Moskvich Production Association collective is looking with concern at vehicle sports--they serve not only for indoctrination, but also aid in improving the models produced.

The Moskvich Production Association collective marks its 50th anniversary at the end of the final year of the five-year plan. Production of a new Moskvich modification will begin on the eve of the jubilee. This "luxury" vehicle will have not only a new front and rear body style, plastic bumper (the first in domestic automaking), and improved transmission, but higher operating indicators as well. In particular, fuel consumption and toxic emissions will be reduced.

During the period since the 26th CPSU Congress, the Moskvich Production Association has achieved considerable successes in development of production, economy, and sociocultural development. During 4 years of this five-year plan, production volume rose 36.4 percent, labor productivity increased 16.5 percent, and products worth R34 million above the plan were manufactured, including 3,560 cars. The tasks of the final year and of the 10th Five-Year Plan overall are being fulfilled successfully. Following the example of the capital's progressive enterprises, plant auto-makers widely unfolded socialist competition for fulfillment of 1980 tasks prior to the 63rd anniversary of Great October.

Guided by the decisions of the June (1980) CPSU Central Committee Plenum and preparing their gift of labor for the 26th CPSU Congress, the Moskvich Production Association collective made higher socialist pledges: to overfulfill the 1980 task on product sales by R4.5, including manufacture of 650 vehicles above the plan.

As always has been the case, during the plant's half-century history its people, its golden fund--worker, engineer, and employee cadres--will give all their effort, knowledge, and energy to accomplish the tasks levied on them: conclude the 10th Five-Year Plan in a worthy manner and meet the 26th CPSU Congress the same way.

Breakdown of the Three Million

Model and Modifications	Years of Manufacture	Quantity, thousands
400	1947-1954)	247.4
401	1954-1956)	
402	1956-1958	94.1
407	1958-1963	360.0
403	1963-1965	133.5
408	1964-1975)	1,331.5
412	1968-1975)	
2140 & 2138	Since 1976	833.3
Total:		3,000.0

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MOTOR VEHICLE

BRIEFS

METAL FOR VEHICLES--The first section of a large shop for cold rolling of sheet steel went into operation ahead of schedule at the Novolipetsk Metallurgical Plant. The largest in the country, this shop has been equipped with automatically-controlled production equipment. It is to produce 1 million tons of high-quality thin sheet steel annually for machine building needs. This sheet steel mainly will be used for vehicle bodies. Work is underway at a high rate on the second section of the cold rolling shop. When this work is completed, the shop's capacity will reach 1.5 million tons per year. This will be a labor gift to the 26th CPSU Congress. [Text][Moscow ZA RULEM in Russian No 11, Nov 80 p 9] 7869

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RAILROAD

REPORT ON THE FIVE-YEAR PLAN FOR TRANSPORT

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 12, 1980 pp 2-3

[Unattributed article: "The Outset of the 11th Five-Year Plan"]

[Excerpts] Appreciating what has been achieved, our party also speaks openly about shortcomings and unsolved problems. Along with impressive, irrefutable successes in the national economy, there were and are great difficulties to surmount. Many were caused by objective reasons, but added to these were subjective ones linked to work deficiencies. The control and planning mechanism, management methods, and conscientious discipline, it was noted at the [October 1980] Plenum, still did not make it possible to rise to the level of contemporary requirements. This hindered the turn towards efficiency and is one important reason for nonfulfillment of plans for a number of positions.

Everything said fully applies to railway transport also. The final results of the 10th Five-Year Plan are still to be tallied, but it is already clear now that transport continues with great effort to insure a growth in shipments. The overall increase in shipping did not result in an improvement in a number of vital qualitative indicators.

This year also is characteristic in this regard. For 10 months freight dispatch rose 49.5 million tons compared to the corresponding period in 1979, even though the plan was 1.7 percent underfulfilled. Car layover time at a single technical station and undergoing loading decreased somewhat, but their time en route increased 1.6 hours. As a result turnaround was delayed seven-tenths of an hour. Average daily car productivity was 157 ton-kilometers net above the corresponding period last year, resulting in more than 4,000 cars being freed daily for additional loading. Locomotive productivity overall between January and October 1980 was at last year's level. The average train weight on sections served by electric traction rose 19 tons and increased 4 tons on those served by diesel traction. In other words railway workers this year, even though they achieved some improvement in their work, are still in great debt to the national economy.

The October (1980) CPSU Central Committee Plenum and the fourth session of the USSR Supreme Soviet, tenth convocation, discussed the draft State Economic and Social Development Plan and the draft 1981 State Budget and passed the appropriate decrees and laws. A profound and comprehensive analysis of the 10th Five-Year Plan and of next year's plans is contained in the great and brilliant speech given by comrade L. I. Brezhnev, CPSU Central Committee General Secretary and USSR Supreme Soviet Presidium Chairman. The basic tasks for the coming five-year plan as a whole also were levied. The means for accomplishing these tasks were pointed out, difficulties and deficiencies were brought to light, and ways to surmount them and to move toward new successes in economic and social construction were indicated.

Transport was included among the trends in economic activities which deserve the most serious attention. The necessity to find reliable ways to accomplish the tasks linked to this, beginning already with the 1981 plan, was pointed out at the Plenum. And next year's plan is very intense. What goals must railroad workers achieve at the outset of the 11th Five-Year Plan?

Rail freight turnover is to increase 2.7 percent, with the greatest growth intended for the railroads in the eastern portion of the network and Kazakhstan. The shipment structure also continues to change significantly: more than half of its growth involves fuel, mining and metallurgical, and timber and mineral fertilizers shipped, as a rule, over great distances and via the network's heaviest-travelled routes. All this causes additional difficulties and requires skillful maneuvering and precise distribution and siting of shipping resources.

Freight shipments must increase on all railroads, but they will increase at especially high rates on the Kuybyshev, Volga, Gor'kiy, Northern, Kemerovo, Alma-Ata, South Urals, Krasnoyarsk, Sverdlovsk, Donets, and Dnepr mainlines. Suffice to say, dispatch of coal alone from the Kemerovo and Donets railroads is to increase 7 million tons. Along with the Tselina [Virgin Lands] Railroad, they are to provide the total growth of coal shipments. The Kuybyshev (approximately 2.5 million tons), Volga, Baltic, October, and North Caucasus mainlines will provide the greatest growth of petroleum product shipments. Dispatch of timber on the Sverdlovsk (about 5.5 million tons), Northern, Gor'kiy, and East Siberian railroads will increase sharply.

Rail passenger turnover must increase to 346 billion passenger-kilometers. This is a very significant addition compared to anticipated fulfillment this year. Urgent measures are needed to improve the organization of passenger movement, to adhere strictly to train schedules, and to step up the supervision over seat distribution and use. All measures must be taken to improve passenger services and to expand those being provided.

Great assistance again will be provided to the railroads and extensive resources are being allocated to develop their material and technical base. The intention next year is to place 760 kilometers of new lines and 860 kilometers of secondary track in operation and to electrify sections with a total length of approximately 1,000 kilometers. Lines with a length exceeding 2,000 kilometers will be equipped with interlocking and dispatcher control boards. Industry will supply new electric and diesel locomotives, passenger and freight cars, thermally reinforced rails, and track and freight-handling equipment.

It goes without saying that railway workers cannot count on new construction and on additional technical resources alone. They must elevate the level of shipping operations, achieving strict discipline on all links of the transport conveyor, more rationally use extant technical resources, primarily cars and locomotives, and widely introduce progressive labor methods and forms. Freight car turnaround must be accelerated approximately 10 percent compared to the 1980 anticipated fulfillment and train speed must be increased at least 1.8 kilometers per hour. Car layovers at technical and freight stations need to be reduced considerably. It is extremely important to eliminate the serious deficiencies in the organization of train and freight operations and to improve coordination among freight consignors and consignees.

Use of the locomotive fleet also must be improved significantly. The intent is to raise locomotive average daily productivity about 40,000 gross ton-kilometers and to do so mainly through further increasing train weight and distance run. Under these conditions the necessity for comprehensive development and dissemination of the Moscow Railroad collective's know-how in increasing freight shipments using longer, heavier trains is perfectly evident. There is the need to be concerned also about wider introduction of the know-how of the workers at Sol'vychegodsk and of traffic and locomotive department personnel on the Belorussian and Northern mainlines.

As calculations indicate,correspondingly difficult but certainly possible tasks have also been levied on the workers in transport's other services and departments. Requirements levied on railway workers will increase, with one of the main ones being comprehensive reduction in unproductive costs and various losses. There is a need to achieve acceleration of technical progress, improvement in labor and supervisory organization, more purposeful and effective use of capital investments, and the strictest economy regime everywhere and in everything. Ahead lies completion of preparations for conversion to new management methods aimed at increasing production efficiency and quality. All this must insure unconditional fulfillment of passenger and freight movement plans and improvement in technical and economic indicators. Railway worker labor productivity in 1981 is to increase 1.6 percent, while the production cost of shipments is to drop 1.9 percent.

Our party will place a rise in the peoples' standard of living in the center of practical work done in the field of economics. Enveloped by the great concern and attention of the Communist Party and the Soviet government, railway workers during the 10th Five-Year Plan received a significant increase in wages; a longevity increase and other benefits were introduced. And the intention is next year to accomplish a number of other significant social measures for them. More than 1.6 million square meters of living area will be placed in use on operating sections. Children's preschool institutions for 9,800 students, schools for 9,300 students, and hospitals for 1,400 patients will be built. Per capita participation in housing construction is expanding, from which railway workers will receive an additional 240,000 square meters of housing.

These are the 1981 goals. And the perspectives for the 11th Five-Year Plan overall and for a longer period will be identified in the "Basic Trends in USSR Economic and Social Development for 1981-1985 and Until 1990." A draft of this important document is being submitted for national discussion.

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RAILROAD

REPORT OF A CONFERENCE ON USE OF LONGER, HEAVIER TRAINS

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 12, 1980 pp 65-66

[Unattributed article: "Effectiveness of Operating Longer, Heavier Trains"]

[Text] The Economics Section, Central Board, Railway Transport Scientific and Technical Department, and the Moscow Railroad Scientific and Technical Department held a conference in Kaluga to discuss problems of improving the system of financial incentives for railroad collectives and workers who organize the reception and dispatch of longer, heavier trains. Workers from the Moscow, Northern, South Urals, West Siberian, Odessa, Volga, and other railroads, scientific workers from VNIIZhT [All-Union Scientific Research Institute of Railroad Transportation] and TsNIITEI [Central Scientific Research Institute of Information and Technical and Economic Research], and representatives of railway transport higher educational institutions participated.

Discussed at the conference were economic problems involving operation of longer, heavier trains, in particular, creation of a financial and moral incentive system, determination of economic effectiveness, and increasing the capital-output ratio. Economists from the Moscow, West Siberian, and Volga railroads shared know-how in development and introduction of a financial incentive system for workers involved in operation of longer, heavier trains. Representatives of other railroads examined problems relating to the operational indicators for railway transport, and particularly problems of improving financial incentives for workers on dispatch shifts for an increase in shipment volume, improvement in equipment usage and throughput, as well as an increase in the weight of unit trains through rational use of car carrying capacity and volume.

Improvement in railway transport operations depends upon the viability of economic levers and incentives and upon the system of economic incentives for effectiveness and quality in operations carried out by railroads and their subdivisions. One should keep in mind that a number of measures have been taken in railway transport in recent years to improve cost accounting, wages, and economic incentive. Positive know-how in providing incentives for operations has been accumulated in the railroad network.

Know-how accumulated on the Moscow Railroad and approved by the CPSU Central Committee in operation of longer, heavier trains received broad dissemination and makes it possible to increase section capacity and to deliver more national economic freight using the same technical resources.

However, fundamental improvement in shipment organization and intensification of the economic mechanism's impact on the final results of railway transport's activities depend upon solution of a number of other problems involving the special features of these activities. It is important here correctly and profoundly to generalize the know-how railroads have accumulated regarding effective incentives to improve operational indicators, to provide economic incentives first of all for workers on the most heavily-travelled sections with a high level of throughput use and bonus payments for indicators reflecting the final operational results. Also requiring improvement is the fund generation system in which the indicators of operational activities and others must be reflected precisely.

Conference participants made recommendations aimed at mobilizing internal economic reserves and at improving the effectiveness and quality of railway transport operations. A recommendation was made to concentrate efforts on further improvement and elevation of the role of economic levers and incentives, operational effectiveness and quality, and viability of a bonus system for increasing train length and weight.

A recommendation was made that MPS [Ministry of Railways] main administrations (traffic, freight, and planning and technical) and the Administration of Labor, Wages, and Safety Engineering, in conjunction with VNIIZhT, refine the decree on worker bonuses. The aims here are further dissemination of the know-how accumulated on the Moscow Railroad regarding improvement in economic incentives for the preparations for use and movement of longer, heavier trains and improvement in other operational indicators. Here they precisely should determine the weight norm so that bonuses can be paid when this is exceeded; they should envisage the economic interests of station workers for the formation of heavier trains and of freight department workers for better use of car carrying capacity and volume.

There was the recommendation that MPS economic administrations, in conjunction with the main sectorial administrations, the railroads, and VNIIZhT, envision the use of qualitative operational indicators in the fund generation system throughout all administration elements. Moreover, there is a need to supply larger economic incentives on sections and routes with the highest freight saturation and which fully use carrying capacity and throughput. Such increased incentives can be realized from the complex of indicators when the norms for economic incentive fund generation are established, when the norms for the ratio of labor productivity and average wage growth are planned, and when the amounts of the bonuses paid are determined.

A recommendation was made that the appropriate MPS administrations intensify economic interest in increasing capacity and improving the quality of shipments when improving the bonus system for all worker groups in order to make shift workers directly involved with train traffic more interested in improving qualitative operational indicators and fulfilling the traffic graph. There was a recommendation to reexamine the extant decree on bonus payments and to generalize know-how on bonus payments to workers for fulfillment of tasking involving transfer of trains from point to point and the preparation and operation of longer, heavier trains. Proposals should be prepared on refining the procedure for allocating resources to the bonus fund for the workers on the railroads and in enterprise transport shops for completely loading cars and for reducing car layovers during loading operations.

A requirement also exists to examine problems of increasing the economic responsibility of the railroads and of their subdivisions for the formation and dispatch of partially-loaded, incomplete trains, creation of a wage fund reserve for incentives to operate longer, heavier trains on restricted sections, and improvement in the indicator system for locomotive fleet use.

Considering the important significance of increasing line capacity by increasing train length and weight, the conference recommended the creation within MPS of an overall system program and goals authority which would handle consistent integrated conduct of the appropriate measures. The recommendation was made that the MPS main administrations concerned, as well as transport scientific research organizations, jointly develop the methodology for comprehensive evaluation of the economic effectiveness of organizing the traffic of longer, heavier trains.

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MEASURES TO CONSERVE FUEL ON RAILROAD OUTLINED

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 12, 1980 p 24

[Article by L. P. Makarov, instructor engineer, Georgiu Dezh Depot, Southeast Railroad: "How to Use Fuel Resources Economically." Passages in slant lines printed in expanded text]

[Text] Advice to the Young Engineer

On each run the weight of the train, speed limit, signals, and station clearance conditions differ; therefore, train operation in each case has its own special features and fuel consumption differs. Nonetheless certain rules exist and adherence to them makes it possible to operate a train with the least consumption of electric power and fuel.

Basic advice on economic consumption of electric power and fuel when operating trains boils down to the following.

/Start a train only after the brakes have been released completely./ The time required for the full release and discharge of automatic brakes on a train is stipulated in paragraph 87 of Instruction on Automatic Brakes TsV-TsT-TsNII/2899. For freight trains, depending on braking type, this should be from 1.5 to 6 minutes. The exception is starting a train on a grade. Here, to avoid a break in the train, the controller notches are advanced at the moment the brakes on the rear cars move to release, but still are not released completely.

/Accelerate the train where possible at a moderate rate when there are loads on the traction motors, without exceeding the force of the allowable adhesion of the locomotive's wheel pairs with the rails./ At low speed and with the engineer's controller in the lowest notches, the locomotive's tractive effort is close to the adhesive effort of the wheel pairs with the rails. As speed increases the tractive effort automatically decreases; therefore there is a requirement to increase the load on the motors, taking the speed into account. Slippage of the locomotive leads not only to additional consumption of electric power and fuel, but also to an increase in wheel pair tread wear, their heating up, and rail weakening and wave wearing.

/Only reduce train speed to the established value when testing automatic brakes./ This eliminates extra fuel consumption to start the equipment moving. The power losses are greater the higher the speed prior to braking.

/Discharge the load prior to the platform at that speed which will allow you to reach the platform without using the automatic brakes./ Experienced engineers use this procedure widely. The speed required prior to shutting down the motors can be determined as follows. On a regular trip cut the load in time and mark the speed at which this was done. Then watch to see how the train moves along the platform. On the next trip refine the speed of approach to the platform, increasing or decreasing it.

/Approach a prolonged descent at low speed./ The engineer in time proceeding along slightly exceeds the scheduled speed and reduces the load just before the prolonged descent, reaching it at reduced speed. The train's kinetic energy thus is used more rationally.

/When travelling along a descent strive not to lose headway periodically/ since time lost here will have to be regained on another section of track.

/Leave a prolonged descent to a platform or a grade at maximum permissable (set) speed./ When departing a descent the train's speed is regulated by braking so that it will not drop below that set for a given location.

/Use platforms and the changing section of the track for travel without using the tractive mode./ The efficiency of a locomotive decreases as the load increases from the nominal. Therefore, the tractive mode, given small loads, is not economical and it is better to travel the light section of track in a coast, ahead of time having developed the maximum permissable speed.

/Discharge the load in time prior to a location with speed limit./ In order to lose less headway when travelling through a dangerous area, maintain at least the set train speed along the open line. When approaching the area with a speed limit, reduce the load in time, taking the section of track, weight of the train, and train speed into consideration. Then establish the train's speed close to that assigned, using controlled braking prior to reaching the dangerous area.

/In the tractive mode operate the train without slippage of the locomotive's wheel pairs and observe allowable engine heating./ In order to avoid slippage on a grade, it is better to travel along part of the grade at the expense of the train's kinetic energy stored up from an easy section of track. The load on the tractive motors should be decreased somewhat as you depart the grade.

Approaching a curved track where slippage usually occurs, /dispense small portions of sand in time/ beneath the locomotive's forward wheel pair so that the sand does not fall under the cars and does not increase resistance to the train's movement.

/Where necessary make up headway on an easy section of track./

/Control the train's automatic brakes skillfully and economically./ Place them in operation for this correctly and in time. Train speed on descents is reduced to the level that allows the brakes to discharge successfully prior to a repeat braking. When departing a descent and given the proper signals, the train's automatic brakes must be released and the speed ought to be at least as fast as that assigned.

/Widely use recuperative and rheostat braking./ If the recuperative braking electrical circuit is connected up in time, it can be used not only on prolonged descents, but also at many platforms. In certain instances, rheostat braking, in spite of the fact that electric power is expended to cool the resistors, also turns out to be more economical than air brakes.

/In an emergency stop, halt the train on a flatter section of track./ When starting up a train on a descent, the train begins to move by itself after the automatic brakes are removed and uses up absolutely no power.

/Try to anticipate the yellow signal light./ Prior to departure experienced engineers monitor when and which trains depart for the section lying ahead. En route they orient themselves to the movement of the train ahead, considering its entry onto a grade or into a section with a speed limit. This makes it possible either to cut off the load or to throttle back and thus eliminate extraneous braking.

Undoubtedly there are many other ways to save electric power and fuel.

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RAILROAD

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RESULTS OF USING LONGER, HEAVIER TRAINS DISCUSSED

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 12, 1980 pp 11-13

[Article by Candidate of Economic Sciences F. Ye. Ovchinnikov, VNIIZhT [All-Union Scientific Research Institute of Railroad Transportation]: "Trains of Increased Mass and Length. Economic Impact and Technical Problems"]

> [Text] Rail transport was assigned important tasks at the October (1980) CPSU Central Committee Plenum. Successful accomplishment of this tasking greatly depends upon increasing railroad throughput. Formation and movement of trains of increased weight and length, therefore, is a large reserve in this area.
>
> However, wide dissemination of progressive know-how, both in the network of railroads as well as among the initiators themselves--the Moscow Railroad--is being delayed due to slow solution of a number of organizational, technical, and economic problems. Publishing this article, the editorial board requests that railway workers respond to the problems touched upon here, provide their proposals, and share accumulated know-how.

At present locomotive brigades are operating longer trains on all railroads in the network. During 1979 alone more than 33,000 such trains in which an extra 14 million tons of freight were moved were operated on the Belorussian Railroad. This made it possible to release 15 locomotives daily and to obtain an annual economic impact of R816,000. During the same period more than 62,000 such trains were formed and operated at 30 stations on the Kuybyshev Railroad, resulting in movement of more than 20 million extra tons of national economic freight. The resultant impact was R784,800. The same can be said about other railroads.

All the heavier trains that moved, as a rule, did so between classification yards and partly within just one railroad. The number of trains formed and moved operating between railroads was very small. As a result the impact from formation and movement of longer, heavier trains is decreasing considerably. This article thus is devoted to an examination of the reasons that hinder the formation of such trains.

The State of the Problem

The first steam-powered heavily-loaded train was formed and operated in railway transport more than 40 years ago. Since that time railway transport has undergone a fundamental upgrading: electric and diesel traction have replaced steam. However almost no evolution has occurred in the approach to heavily-loaded trains, now called longer, heavier trains. The determinant for a railroad remained the same--addition of 100 tons or more to a train's normal weight.

For example, a freight train consisting of 50 percent or more freight cars on the Moscow Railroad is considered a longer, heavier train in accordance with the railroad's own order 30/N dated 15 April 1980. Its weight and length, respectively, are 100 tons and five conditional cars above the norm.

At the present time there are two notions of a train's weight: critical weight realized based on locomotive capacity (maximum) and standardized from the graph norm (normal). The critical weight of a train for specific sections is computed on the railroads based upon tractive calculations (according to the conditions of wheel adhesion to the rails) and after testing on an experimental run with a dynamometric car. A standard graph norm is established centrally by the Ministry of Railways [MPS] for complete routes and envisions a reduction in reformation of the trains en route.

Therefore a gap exists between the amount of the critical weight and of the standard graph weight, which at times becomes very large. This gap also is the basic for the formation of overweight trains. It should be noted that movement of trains whose weight is less than or equal to the critical weight is accomplished on the railroads by one locomotive.

In a number of instances a second locomotive is used as a pusher on certain sections when longer, heavier trains are moved. For example, locomotives are employed in this manner on the open lines from Chaykovskaya Station to Mendeleyevo or from Osenets to Bakharevka in the Perm' Division of the Sverdlovsk Railroad.

Locomotive productivity always increases when one locomotive moves longer, heavier trains since its planned value is established using the train's standard graph weight.

Formation and movement of longer, heavier trains are a reserve for further improvement in the throughput of the railroads. However this reserve is used episodically in the railroad network, since constant formation and movement of such trains require solution of a number of problems: lengthening of station tracks, considerable improvement in the quality of equipment repair and inspection, reinforcement of the power department, and so on, which are being solved slowly on the railroads. Initial steps were taken on the Moscow Railroad in 1979 to solve these problems.

Train Efficiency

Formation and movement of longer, heavier trains will permit: assimilation of an additional volume of freight shipments with the extant locomotive fleet; reduction in the number of trains on a section simultaneously; increased section speed limits; increased locomotive productivity; reduced car turnover; provision of "windows" for track and power equipment repairs without harming section carrying capacity and throughput; increased collective responsibility of workers for the results of their labor.

On the Moscow Railroad all longer, heavier trains are moved by one locomotive (with the exception of several test trains with two locomotives on the Rybnoye-Perovo section). Overall in 1979 more than 150,000 train pairs moved on the railroad, including 17,970 in the Moscow-Ryazan' Division. An extra 55.721 million tons of national economic freight was moved in these trains, of which 9.8 million tons moved in the Moscow-Ryazan' Division. On the average the weight of the longer, heavier trains exceeded the norm for the railroad by 178,800 tons and by 545,400 tons throughout the Moscow-Ryazan' Division. For instance, the weight of a train on the Rybnoye-Perovo section according to the norm is 3,500 tons and is 2,800 tons for the return trip, while the estimated weight of a train based on the capacity of a VL10 electric locomotive is 6,000 tons.

Extra cars were moved in overweight trains in 1979, as follows: 1.0217 million for the railroad as a whole, 251,000 in the Moscow-Ryazan' Division. On the average the length of a longer, heavier train exceeded the norm throughout the railroad by 7.2 cars; it was 25.6 cars in the Moscow-Ryazan' Division. This made it possible to release 5,032 graph links [nitka grafika] in the Moscow-Ryazan' Division. Approximately 80 graph links, 30 locomotives, and more than 80 locomotive brigades are being released daily on the railroad.

Movement of single-locomotive longer, heavier trains makes it possible to increase both the average weight of the train and locomotive productivity significantly. Thus, in 1979 as compared to 1978 and given electric traction, these indicators in the Moscow-Ryazan' Division increased from 2,684 to 2,764 tons and from 1.2269 to 1.4097 million gross ton-kilometers, respectively. Moreover, there was a reduction in the total number of trains located in a section simultaneously, the section speed limit was increased, and "windows" were provided for track and power equipment repairs without harming the section's carrying capacity and throughput. For instance, an 8-12 percent reduction in train traffic in 1979 in the freight-saturated Moscow-Rybnoye and Voskresensk-Bekasovo sections made it possible to increase the windows for repair and construction operations by a factor 2.2 greater than in 1978.

The following data shows the number of longer, heavier trains formed and moved and the extra national economic freight they moved in 1979 in the railroad network. Thus, more than 60,000 moved on the Azerbaijan Railroad and they moved more than 26 million tons of freight above the plan, i.e., more than 430 extra tons were shipped in each train. The locomotive brigades from Petrov Val Depot, Volga Railroad, operated some 11,000 trains in which more than 3.7 million tons of freight in excess of the plan were shipped, i.e., on the average each train exceeded the norm by 340 tons.

At present, the formation and movement of longer, heavier trains is accomplished, as a rule, between the classification yards within a single railroad. The efficiency of the organization of shipments via such trains can be increased considerably if longer, **heavier** trains are formed not only with assignments to the stations of one railroad, but for an entire route which encompasses several railroads. Specific work in this regard is underway on the Moscow Railroad, whose workers desire to move and receive longer, heavier trains from the Northern and Gor'kiy railroads. However they have not succeeded in solving this problem affirmatively, neither with the workers of these railroads nor with those of several main administrations in the ministry.

Conditions for Train Formation and Movement

Availability of a stable, heavy freight flow is the basic condition for the formation and movement of longer, heavier trains. It is possible to plot special links in the train movement graph in order to move such trains. For instance, the weight of tank car unit trains was increased 600-1,200 tons in order to form overweight trains on the Belorussian Railroad's Rechitsa-Gomel'-Zhlobin-Vitebsk routes. Overweight trains are being formed in the main for such heavy freight as petroleum products and potassium fertilizers. Dispatchers organize their accelerated movement via differentiated open line movement times.

Therefore the relative growth in the train's weight significantly outstrips its length when such trains are formed and moved. Thus, the gross increase in the train's weight relative to the standard graph norms on the Moscow Railroad in the main ranged from 40 to 70 percent, while the lengths ranged from 10 to 25 percent.

Absence of a stable freight flow leads to the fact that partially loaded, incomplete trains move through the sections along with longer, heavier trains. For example, almost 5 million tons of freight above the norm according to the graph were shipped in longer, heavier trains during 4 months of 1980 in the Baku Division, Azerbaijan Railroad. Moreover, 250 partially loaded trains short 65,000 tons of national economic freight and 650 incomplete trains lacking more than 3,300 cars moved through the division during the same period. In other words, almost 80 extra freight trains were available.

It is impossible to organize the movement of trains meeting the requirements stipulated for longer, heavier trains on all routes and sections without causing harm to the movement of the total freight flow. Here is what traffic workers say in this regard: "We would be glad to make up every train as an overweight one, but what do you use to do so? The traffic doesn't support this. . . ." (GUDOK, 28 May 1980).

When there is no stable heavy freight flow, formation of such trains will cause a considerable increase in freight car layover at classification yards and a reduction in their processing capacity, thereby slowing down the progress of freight car flows. It is possible to move longer, heavier trains efficiently on sections with a simple track profile and given the appropriate movement intervals between trains.

Introduction of the formation of longer, heavier trains on the railroads to a significant degree is determined by the existing difference in the weight of a train set by the train traffic graph established by the MPS and the maximum allowed based upon the design of locomotives and the track profile. In the event that trains are being moved by one locomotive and a train's graph norm and critical weight coincide or practically speaking are identical, no longer, heavier trains exist for such routes.

The following conditions are required also for movement of longer, heavier trains: availability of locomotives which can be operated according to the multiple units system; highly qualified locomotive brigades capable of operating locomotives by radio; a reserve locomotive fleet.

Moreover, there is a need to correct depot costs for shipment work done since movement of longer, heavier trains, whose weight is less than two graph norms, additionally requires an increase in costs for materials, spare parts, fuel, and electric power, and wages, an increase in the operating locomotive fleet, and a corresponding increase in amortization. Besides that, operating two locomotives not according to the multiple units system, but rather by radio, requires an increase in the number of locomotive brigades.

For example, the Novokuznets Division, Kemerovo Railroad, could form and move more than 30 percent of all trains at a weight of 6,000 tons or more. However, due to a locomotive shortage, traffic workers have to eliminate this as an option and form trains weighing 3,500 tons.

Since the conditions for wheel adhesion to the rails do not change when overweight trains are moved, but the train's weight does, this generates extra costs for the locomotive and track department. Here is what V. N. Lisunov wrote in ZHELEZNODOROZHNYY TRANSPORT, No. 4, 1980, page 76: "VL10 electric locomotives recently replaced the VL8 for operations on a number of the more saturated routes electrified with direct current. The increased capacity of the VL10 electric locomotive's tractive units provided the opportunity to increase the weight norm approximately 10 percent, even though the adhesive capacity practically speaking remained unchanged. The annual freight flow increase on these lines was 5-6 percent, but the rail wear on the more difficult sections with small-radius curves rose by a factor of 3-5. Annual track repair costs rose by a factor of 5-6 and sand costs rose 30-40 percent. The work of the locomotives serving the aforementioned sections noticeably became more difficult. Band turning rose by a factor of 2-3, the number of failures per million kilometers of run increased by a factor of about 3, and the number of times large toothed wheels came unscrewed and minor gears weakened and were pressed out rose by a factor of 5."

Also, there are additional costs for the care department due to early replacement of a number of running gear and brake system components. All this also requires an additional cost increase for the formation and movement of trains, for which the railroad departments must compensate.

Organization of the movement of car flows when longer, heavier trains are used requires integrated improvement in the equipment and work technology of the traffic, locomotive, track, car, and power supply departments and precise organization of the labor of their workers. The movement of trains on a section is seriously impeded if the work of one of these departments is sloppy.

Problems in Train Formation and Movement

Generalization of extant know-how demonstrated that many railroads have not solved the following organizational problems involving formation and movement of heavier trains.

The traffic department has not worked out the technology of moving longer, heavier trains along sections, the technology of the work of classification yards and hump yards for such trains has not been compiled, and the train traffic graph is not being accomplished.

Supervision of the quality of locomotive fleet repair and inspection has not been organized with sufficient precision in the locomotive department.

Moreover, car inspection and repair quality is not being insured in full measure. Problems of track quality have not been solved to a sufficient degree and the number of speed limit warnings is increasing. Problems of the operating reliability of power equipment have not been solved completely.

The list of organizational problems also should include insufficient materials and spare parts logistic support for equipment and track repair, great personnel turbulence involving certain professions at classification yards, at locomotive and care technical maintenance posts, and in track repair.

A number of technical problems concerning formation and movement of longer, heavier trains must be solved by railroad departments. This includes development of station fleets and narrow entrances, equipping them faster, lengthening tracks at en route stations and at organization and destination stations, equipping locomotives so that they can be controlled within the multiple units system, improvement in the design of car brake systems, reinforcement of the power department, and improvement in operating information about trains and cars.

The presence of speed limit warnings on sections does not allow locomotive brigades to operate a train in optimal modes and increases the probability of trains stopping on open lines and locomotive units and assemblies breaking down. As a result the movement of car flows along a section can be delayed.

The absence of elongated tracks at origination and destination stations for longer, heavier trains considerably impedes the movement of other trains, which can cause a reduction in station processing capacity and a delay in the movement of car flows on a section.

Examination of longer, heavier trains involves only such weights as critical and graph weights, which do not reflect the operation of locomotives in the optimal mode. Therefore, it would be more correct if on the sections one would calculate the optimal train weight, which would consider not only the technical condition of the locomotives and track and natural and climatic conditions of locomotive operation, but also would characterize their operation in a complex operational situation. Economic conditions—additional costs for the formation of the trains and for locomotive, car, and track repair—should be taken into account where required when computing a train's optimal weight.

At the present time the number of longer, heavier trains formed and moved on railroads, including on the Moscow Railroad, is not being planned. Only special links for such possible trains are plotted on the train traffic graph on the Moscow Railroad.

The group of individuals paid bonuses for the formation and movement of longer, heavier trains (with the exception of the Moscow Railroad) and the amount of the bonus paid for this are small. The proportion of the bonus for such trains in the total amount of the bonus workers receive is insignificant.

Since the formation and movement of longer, heavier trains falls within the purview of railroad worker responsibilities stipulated in the appropriate orders and instructions, bonuses for doing such work at the present time are paid in accordance with extant statutes and are insignificant. Thus, the bonus for the formation and movement of one longer, heavier train to all workers averaged R2.53 in 1979 on the Moscow Railroad. Each worker involved with such trains received a bonus averaging R8.024 for the year, i.e., less than R1 per month.

The railroad workers themselves (those directly doing the work, supervisors, and engineering and technical workers) are not interested in increased responsibility for the formation and movement of longer, heavier trains, which requires the precise organization of the labor of all directly involved and quality work accomplishment at all stages of the transportation process, without appropriate compensation for this.

At present the fund allocated for bonus payments to railroad workers contains a specified amount, which cannot be exceeded all the same. This fund is distributed in accordance with the appropriate measures including the formation and movement of longer, heavier trains. Considering that the impact from movement of such trains is being realized on a national economic scale, it is advisible on railroads and at depots to create a special fund, not tied in with the extant economic incentive fund, from which to make bonus payments to all workers involved in the formation and movement of longer, heavier trains.

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SHORTCOMINGS IN GEORGIAN FREIGHT CAR USE

Tbilisi ZARYA VOSTOKA in Russian 25 Nov 80 pp 1-2

[Article "Freight Car Delays are Detrimental to the State"]

[Text] We know how important it is to fulfill norms for freight car idle time, to use the carrying capacity of cars and to keep the freight car park in good repair.

However, some ministerial and departmental managers of the Georgian SSR, in spite of repeated warnings from the Central Committee of the Georgian Communist Party concerning their personal responsibility for freight car idle time, have not gotten the message. For example, the ministries of agriculture and construction materials industry have frequently been ordered to take steps to improve the use of freight cars. However, the management of these ministries have demonstrated their irresponsibility and are continuing to use freight cars unsatisfactorily.

The Ministry of Construction Materials Industry during the first nine months of this year with 23,739 cars at its disposal has exceeded the norm by 208,954 freight car-hours - significantly more than for the same time period last year. Out of 23 spur tracks within the ministry's system, only 4 fulfilled the norm for freight car idle time. Deputy Minister SH. M. Bezarashvili, who is responsible for solving railroad problems, is not taking needed steps to ensure the timely unloading of freight cars and to reduce their idle time.

The Georgian Ministry of Agriculture is not fulfilling the norm for freight car idle time during loading and unloading operations. During the first nine months of this year the ministry has exceeded the norm by 61,193 freight car-hours while loading agricultural products on 3,514 cars, which is 60 percent of the total amount. On three occasions the ministry has exceeded the norm for the average idle time while unloading cars on their own spur tracks. Out of 14 spur tracks only five are fulfilling the norm for idle time. The Deputy Minister of Agriculture S. P. Dzhindzhikhandze is demonstrating irresponsibility in organizing loading and unloading operations and reducing the norms of freight car idle time.

The Central Committee of the Georgian Communist Party, having studied the unsatisfactory work of the Georgian SSR Ministry of the Construction Materials Industry and the Georgian SSR Ministry of Agriculture and the Transcaucasus Railroad in reducing the idle time of freight cars, has pointed out that the Transcaucasus Railroad is not giving enough assistance to the Ministry of Agriculture in unloading cars. Out of 6,294 cars that the ministry received during the first nine months of the year and which were to be processed by the railroad, only 1,909 were unloaded, or less than 30 percent, which is also one of the reasons for freight car idle time. The First Deputy Chief of the Transcaucasus Railroad, A.A. Kvantaliani, is doing a poor job of regulating the unloading of freight cars and expediting the delivery of cargoes to agricultural enterprises and organizations. Cargo recipients are not receiving timely information.

Shortcomings in the Ministry of the Construction Materials Industry and the Ministry of Agriculture and the Transcaucasus Railroad in the use of freight cars are creating difficulties, which have a negative impact on the overall operation of the railroad and which are hurting the economy of the Georgian SSR. The Party organizations of these organizations are doing a poor job of regulating the work of the Party apparatuses of these ministries in reducing the idle time of freight cars.

The Central Committee of the Georgian Communist Party has emphasized that many city and rayon Party committees have still not achieved a rational use of transport means, including both freight cars and motor vehicles; they frequently are too liberal toward economic managers who are not taking steps to establish order in this matter.

The Central Committee of the Georgian Communist Party has issued a decree to severely reprimand Sh. M. Bezarashvili, member of the Communist Party and Deputy Minister of the Construction Materials Industry, for his unsatisfactory organization of work in unloading freight cars and for failure to fulfill the norms for freight car idle time; the reprimand was included in his permanent record.

Member of the Communist Party and Deputy Minister of Agriculture, S. P. Dzhindzhikhandze, was severely reprimanded for his unsatisfactory organization of loading and unloading operations and failure to fulfill the norms for freight car idle time. The reprimand was entered in his permanent record.

Comrades Bezarashvili and Dzhindzhikhade have been warned that if they do not reach the necessary conclusions and do not eliminate the shortcomings, the question will be raised about removing them from their positions and their membership in the Party.

For his poor work in unloading freight cars on common use tracks leading to enterprises and organizations of the Ministry of Agriculture, the unsatisfactory provision of information to recipients of cargo, the First Deputy Chief of the Transcaucasus Railroad and member of the

Communist Party, A.A. Kvantaliani, it states in the decree, is deserving of severe punishment. However, in view of the fact that he was previously penalized by the Party, the Central Committee of the Georgian Communist Party has warned Kvantalianai that if he does not reach the appropriate conclusions, the question will be raised about removing him from his job.

The Central Committee of the Georgian Communist Party considered it entirely impermissible that the Administration of the Transcaucasian Railroad (Comrade Vardosanidze), due to the lack of a precise accounting system, has for a long period of time been incorrectly informing these Party and economic organs about the idle time of freight cars with cargoes destined for the Ministry of Agriculture.

The Administration of the Transcaucasian Railroad has been ordered to supply timely information concerning the arrival of cargoes, to ensure a smooth supply of freight cars to Georgian ministries, departments and enterprises, and to do everything possible to render practical assistance in organizing loading and unloading operations.

In connection with the significant increase in the volume of transshipping work, the Georgian SSR Ministry of Agriculture (Comrade Sh. M. Etsadashvili) and the Transcaucasus Railroad (Comrade Vardosanidze) are to jointly come up with a specific plan for coordinating work in unloading cars on common usage tracks.

The managers of ministries, departments and enterprises have been ordered to ensure the efficient organization of loading and unloading operations on spur tracks, freight stations and common usage tracks on days off, holidays and at night.

It was noted that transportation headquarters and commissions attached to the city and rayon Party committees: Goriyskom (Comrade R. V. Mazmishvili), Kaspskom (Comrade E. V. Shavelashvili), Ordzhonikidzevskom (Comrade G. S. Sharikadze), Zestafonskom (Comrade M. A. Aslanikashvili), Gagra (Comrade Sh. G. Tsariya), Rustavi (Comrade L. I. Gorgadze), as compared with other regions are using freight cars unsatisfactorily.

These and other managers of transportation commissions and headquarters, who are personally responsible for the situation in their region, must take necessary measures to improve the use of freight cars.

The Central Committee of the Georgian Communist Party has obligated the oblast, city and rayon Party committees to establish a daily, strong control over the work of the transportation commissions and headquarters in their regions to reduce the idle time of freight cars; in sessions of their offices they are to systematically study the situation and to reprimand persons guilty of using freight cars unsatisfactorily.

Other specific measures are planned to reduce the idle time of freight cars and to better use the carrying capacity and to keep the freight car park in good repair.

8927
CSO: 1829

SUCCESSFUL NEW SYSTEM TO COORDINATE SHIP, RAIL WORK IN PORT OF IL'ICHEVSK

Moscow VODNYY TRANSPORT in Russian 20 Nov 80 p 2

[Article by S. Parshikov: "The Effect of Reciprocity"]

[Excerpts] Two years ago when the transportation center consisting of the Kherson seaport, the section of the Odessa Railway, the Kherson Port station, the Kherson dispatcher sector, the river port and the Soyuzvneshtrans [USSR Foreign Transportation] Association began working according to a continuous schedule-plan, the representatives of the various related organizations were like speakers of different languages. After all, each had his own department and his own interests. Thus, the main thing became the desire to understand each other's interests and find a common language.

Before the practices borrowed from Leningrad were introduced discord and arguments were common. For example, the railroad workers would be unable to supply the needed number of cars on time; instead of looking for ways to solve the problem they would make complaints against the port workers, who, for their part, considered the reason to be the irregular work of their colleagues and blamed it on them. Sometimes the managers of the Kherson Port station would promise additional railroad cars for the port workers during difficult periods, but the promises were soon forgotten and not carried out. In the first stage after switching to the continuous schedule-plan it was almost necessary to use force to get the representatives of the associated organizations to come to the weekly sessions of the coordinating council.

It would be an exaggeration to say that the transportation system works without a hitch today. Nonetheless, thanks to continuous planning the port was able, in 1979 alone, to reduce ship downtime by 13.9 percent and increase the gross intensity of cargo handling work by nine percent.

[illegible] experience working on the continuous schedule plan accumulated it became obvious that this form of labor organization with coordination of action by related sectors offers an opporunity for a substantial reduction in ship and railroad car downtime and makes it possible to supply rolling stock to the wharves without delay and increase the labor productivity of dock workers.

The interest of all workers in the final results of their labor began to play a decisive part in coordinating the efforts of the associated sectors of the transportation center. It is also important that information began to be sent to the port in advance on the approach of cargo and the amount coming on the different railroads. This enabled dispatchers to make up schedules ahead of time.

An example would be the messages that arrived at the dispatching office of the seaport on 11 September of this year. According to them, tractors were arriving soon in Kherson on the Belorussian Line, plus two cars of ammonium sulfate on the Moscow line, two cars of ammonium sulfate from Donetsk, two cars of metal from the Central Asian line, and so on. The total was 40 cars. The freight arrived at an intensive pace that day, but timely information helped them process it on time.

One case is especially memorable to the Kherson transportation workers. The motorship Karlis Ziyedin'sh delivered a large amount of butter to the Kherson seaport. They determined that this cargo was destined for further shipment on the Transcaucasian Railroad. It was decided to direct the ship to Batumi by sea and ship the cargo on through that port. Through the coordinated actions of all elements of the transportation process and the speedy work of dispatchers, who made good decisions at the right time, they were able to free 75 refrigerator cars.

"Along with our successes in continuous planning, however," says Ye. Bal'menko, head of the commercial seaport, "we also still have a number of unsolved problems. While cooperation between port and railroad workers is generally working out well, we have not yet been able to find a common language with the administration of motor vehicle shipping. Its vehicles only haul 'urgent' freight from the port."

A year ago the coordinating council suggested that part of the freight be shifted from the railroad workers to vehicles of this administration (it does have vehicles available), but the stumbling block was payment. The point is that the motor vehicle people receive payment in advance for their services, but the railroads are paid by the receivers of freight. An appeal was sent to the Ukrainian SSR Ministry of Motor Vehicle Transportation to resolve this question of payment for shipping, but no answer has been received yet.

Nonetheless, despite these problems, the Kherson transportation workers have been able to do a great deal to improve their work using the continuous schedule plan. The main thing that helps them get good results in their combined effort is mutual trust.

11,176
CSO: 1829

OCEAN AND RIVER

COOPERATION BY PORT, RAILROAD WORKERS SUCCEEDING IN PORT OF KLAIPEDA

Moscow VODNYY TRANSPORT in Russian 27 Nov 80 p 2

[Article by S. Borik: "The Worker's Duty"]

[Excerpts] They have reduced railroad car downtime in the port 0.61 hours compared to the norm (which, unfortunately, the collectives of the other transportation centers of the Baltic have not been able to do) and achieved the highest percentage of fulfillment of the plan for shipping export goods. An additional 2,494 kilograms of imported goods was shipped in each railroad car. This is 2.5 times the average indicator for the region. The working practices of the Klaipeda transportation center were highly praised at a seminar of specialists of the maritime fleet held recently at the Exhibition of the Achievements of the National Economy. The chief thing noted there was their creative elaboration of the practices of the Leningrad workers in specific local conditions.

While adhering to the principles of the method, which involve continuous mutually coordinated schedule-planning of the work of the center, the associated work sectors focused their efforts on finding ways to bolster cooperation in the main, dominating points of the port.

The traffic capacity of the Klaipeda seaport, which has one of the largest groups of experienced dock workers and machine operators in the Baltic and highly productive, heavy-duty machinery, is severely restricted by storage areas and the inadequately developed road operations service. Therefore, the coordinating group, which works under the chairmanship of the chief of the port, reviews both ongoing problems and long-range questions. Two areas are considered determining: coordination of efforts and precision of planning. Other focuses of attention are development of joint measures to prepare for work under winter conditions, assignments to associated sectors to increase shipping volumes of stacked cargo, ways to cooperate and economize in use of computer equipment, and steps to insure preservation of cargo and railroad rolling stock. Each quarter a check is made on fulfillment of the comprehensive plan for improving the work of the transportation center. The plan was ratified by the management of the Baltic Railroad and the Lithuanian Steamship Line and includes organizational and technical measures running all the way to 1982. A periodic check on the decisions of the coordinating group, made with the help of local party bodies, promotes further development of the center in the interests of bolstering cooperation.

There is one more aspect of the coordinating group's activities that cannot be overlooked. In addition to the associated enterprises that make up the transportation center there are several organizations which are not formally part of it but work closely with the transportation workers. These are the sanitary, firefighting, quarantine, veterinary, technical and other inspection services; there are 20 of them. They have also been involved in the work of the group and when necessary they are invited to meetings to discuss upcoming work. At these sessions the inspection requirements are mutually reconciled, so that they do not conflict with one another. Real working contact has been established and as a result these inspection services, without lowering standards, are helping the port work under optimal conditions. When necessary they even perform their functions while ships are in the roadstead or resecuring moorings.

Large-scale competition among Kalipeda port and railroad workers has inspired all the participants to work to speed up the processing of rolling stock and sharply improve the quality of work. The Kalipeda workers are loading almost 2.5 tons above the norm into every railroad car this year.

Creative cooperation among the associated collectives has afforded improvement in work procedures, which helps process the fleet and railroad cars faster. For example, a manual has been compiled on technical requirements for arrangement and securing of freight on rolling stock. With it port and railroad station workers are able to select the optimal scheme of freight arrangement and securing quickly. The manual, compiled in accordance with all the requirements of technical conditions and regulations, helps make maximum use of the freight capacity of the cars. Thanks to creative searching the manual became a kind of concentrated expression of progressive discoveries. Here are two examples of the many.

Not long ago car loading workers handling freight in barrels left gaps in the cars. It was considered inevitable. Innovators rejected the conventional view; they supplied the car loaders with highly productive grappling hooks that could handle two barrels, which increased the number of rows along the length of the car. As a result of introducing the new technology 10 freight cars are freed for each 1,000 tons of such freight loaded.

Large quantities of imported chemicals and other items used to arrive in the port in sacks, cases, and boxes; it took a great deal of manual labor to handle them item by item and car processing went slowly. Now that close cooperation with foreign trade associations and shipping firms has been established, the cargo that formerly came individually is now delivered in stacks on disposable pallets. But the stacks proved to be the wrong dimensions for domestic railroad cars, so the freight capacity of the cars was not fully used. Looking after the interests of its partner, the port was able to get the stacks to correspond to the requirements of domestic railroads. Car processing time was cut significantly and the weight of a car lot rose 15 percent.

11,176
CSO: 1829

OCEAN AND RIVER

FREIGHT CAR DELAYS REPORTED

Moscow IZVESTIYA in Russian 29 Nov 80 p 3

[Article by IZVESTIYA correspondent F. Chernetskiy, Odessa: "Where Are the Freight Cars Slowing Down?"]

[Excerpt] One often hears complaints about railroad workers. There is no question that they cannot escape blame. But the transport conveyor is a general matter. Where in the main are freight cars slowing down? On enterprise and organization sidings. What is slowing them down there? It can be said that, as we saw, the rail cars sometimes stand "idle." Who is at fault here?

Let's take the Odessa Production and Technical Acquisition Administration in the Glavpromstroysnab [Main Administration of Construction Material Supply] office. People's controllers conducted inspections which confirmed that rail cars lay over on the administration's sidings up to 12 or more hours, rather than the permissable 2 hours. You would think that something unexpected had come up or perhaps the situation arose suddenly? Nothing of the kind. For many years now the directors of the administration and office have been filled with the fervent desire to change the situation fundamentally. Six years ago they even compiled a detailed technical reequipment plan. The linchpin of the plan is replacement of the tower crane. The requirement is for a crane that can lift 10 tons, rather than 5 tons, of freight. But as you can see, the fervent desire is there but results are lacking. The years pass but nothing changes.

At the fishing port, let's say, freight car layover greatly exceeds the norm. Is this random, unexpected? Absolutely not. Talks have been in progress for a long time about the need to replan the rail lines. What use is it to dispatch a train for the unloading of a ship and then not allow the train to reach the cold storage facilities? How much energy has been expended on talks, how many flowery words have been spoken about the usefulness of small-scale mechanization and about its introduction, but what is the sense? None whatsoever. As usual hope lies in muscular strength and that is why workers are not anxious to work at the fishing port.

Back at the beginning of the five-year plan, considering difficulties with transport, a decision was made in Odesskaya Oblast to inspect the sidings at all enterprises and organizations. The inspection was detailed and People's control authorities also participated. For each "client" they compiled a list of necessary measures which could speed up the freight loading and unloading process. Representatives from interested ministries and departments were invited to Odessa; moreover they ought to be called upon to allocate financial and material resources. The plans developed were ratified with the appropriate signatures and seals.

And now it turns out 5 years later that far from everything intended has been accomplished. It would take a long time to enumerate everything, so we will only cite several facts. Reinforced Concrete Products Plant No. 1 in Odesszhelezobeton Trust in 1976 was tasked to build an additional track from First Odessa-Zastava Station. There is no track. The Grain Products Combine was ordered in 1977 to mechanize the loading of brans into freight cars and install conveyors with a productivity of 350 tons per hour at Odessa-Port Station. There are no conveyors. That same year the Izmail Association in the canning industry was to have extended the track to Izmail Station and pave an area for reception of glass containers and also to mechanize the loading of sugar and salt. No track or area exist.

And then there is the Bol'shevik Plant. Freight cars at one time lay over for a long time at its sidings, too. Now it is cited as an example: an arriving freight car after unloading departs the plant 2 hours earlier than envisioned by the norm. Here they acquired a standard electric loader, a mechanized installation for unloading bulk materials, introduced technological charts for loading various types of products into freight cars, established a sliding schedule for the 3-month operation of loading brigades and built a special area. The expenditures were minor, but the effect telling. Similar good management and interest were demonstrated also as transport problems were solved at the Rolled Steel Plant imeni Dzerzhinskiy, Bulk Plant No. 5 and at other enterprises.

Naturally, a paved area, a conveyor, and some 200-300 meters of additional track, if looked upon in isolation at a particular enterprise, do not significantly effect rail transport operations. But, when taken together on an oblast scale, and more than one oblast at that? Or if you are talking about introducing elementary order on the sidings of tens of thousands of Ministry of Railways "clients"? It is not difficult to imagine how much the state would gain from this.

There is no doubt that everyone is interested and obliged to speed up the movement of freight cars. But a desire, regardless of how fervent it is, without specific deeds is just like Bengal light: a lot of sparks and noise, but no heat.

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CSO: 1829

BRIEFS

LATVIAN RIVER TRANSPORT--Combining the efforts of the Latvian River Steamship Line and the educational institution proved very useful, so it was continued. The river workers are constantly sponsoring activities at "their" branch. They help with everything, whether it is getting teachers, providing experienced specialists for consultation, or setting up on-the-job training. After their fourth year of study, students go through on-the-job training on ships of the line. They work as machinist's mate-pilots. One year later, upon completion of the branch of the vocational-technical school, they receive diplomas as second navigators, second mate to the chief engineer, on ships with up to 300 horsepower. After successful work on two cruises they can become first navigator, first mate to the chief engineer, and then the way is open to becoming a captain. The steamship line's activities to secure good recruits are increasingly wide-ranging. In particular, they have involved Riga secondary schools, especially in Kirovskiy Rayon where the steamship line is located. Once a week students in the 9th and 10th grades study special topics; the young men learn the occupation of river transport worker. The two-year curriculum is planned not only to attract students with the glamorous facets of their future occupation, but also to give them definite skills. Upon graduation, students receive both a certificate and a document which permits them to work as machinist's mate-pilots on ships. [Excerpts] [Moscow VODNYY TRANSPORT in Russian 25 Nov 80 p 2] 11176

IL'ICHEVSK PORT SUCCESSES--The collective of the Il'ichevsk division of the Black Sea Steamship Line's "Transflot" [Transport Fleet] has successfully completed its five-year plan for all indicators. Many factors contributed to their success. One was setting up specialized brigades of tally clerks to keep track of motor vehicles on ro-ro ships in the container section of the Port of Il'ichevsk. This resulted in a significant reduction in commercial defects and cut the steamship line's losses from cargo handling. Among the leaders in socialist competition were supervisors Ye. Baranenko and I. Motovits, dispatchers G. Belokhonova and V. Bolotova, group forwarding agents N. Dariyenko and S. Korfunenko, operators O. Lyakh and R. Malatskovskaya, and others. These people not only work well but also pass on their know-how to new specialists, constantly supervising them and inspiring them by example. [Text] [Moscow VODNYY TRANSPORT in Russian 25 Nov 80 p 1] 11176

NAVIGATION ON AMUDARYA OPENS--The new year's first caravan of barges with freight for Afghanistan was dispatched down the Amudarya River to the port of Termez. Navigation for 1981 was opened by the diesel motorboat "Ashkhabad", whose crew overfulfilled the five-year plan for freight turnover by tens of thousands of tons. The crew of the "Ashkhabad", and along with them the majority of ships' crews, have pledged to fulfill the first quarter's production program before the opening of the 26th party congress. [Text] [Kiev SIL'S'KI VISTI in Ukrainian 4 Jan 81 p 1]

ICEBREAKERS TO USSR--The Helsinki shipyard of Wartsila has concluded a large new deal with the Soviet Union. In 1983-1984 the shipyard will deliver to the Soviet customer seven river icebreakers for shallow water. The value of the order is about FM700 million. The orders secured by Wartsila will, after the new agreement, amount to nearly FM6 billion. The ordered icebreakers represent unique technology in the world. Their draught is nearly 2.5 m. This type of vessel has been developed in cooperation with the USSR Ministry of the River Fleet. The icebreakers have been designed for operation on Siberian rivers in difficult winter conditions. The new icebreaker will considerably extend the current 4 to 6 months-long navigation period in the northern waters of the Soviet Union. [Text] [Helsinki Domestic Service in Finnish 1400 GMT 23 Dec 80 LD]

CSO: 1829

MISCELLANEOUS

PROBLEMS OF TRANSPORT INDICATORS DISCUSSED

Moscow EKONOMICHESKAYA GAZETA in Russian No 48, Nov 80 p 10

[Article by M. Minakov, sector chief of the Institute of Complex Transportation Problems, candidate of economic sciences, under the heading "Problems of Theory": "Transport: The Ratio of Development"]

[Text] Transport development, which meets the increasing needs of the national economy for hauling freight and passengers, has become especially relevant in recent years when the imbalance in the freight hauling plan has been observed. Establishing the necessary proportion presupposes the availability of data adequately describing the production possibilities of transport and the needs of the sectors of the national economy for its services. Determining these needs is a most complex problem of plan work; its solution must be considered also in conjunction with preparing the long-term complex program for transport development. This program, L. I. Brezhnev noted at the November (1979) Plenum of the CPSU Central Committee, has to cover the problems of developing and linking all types of transport. Special attention, he stressed, has to be paid to improving the organization of transport and to planning it more efficiently. In accordance with the decree of 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers, proposals for strengthening the influence of the economic mechanism on the end results of transport activity are now being drafted as well.

Determining the Needs

The choice of indicators to express the need of the national economy for moving freight has important theoretical and practical importance. Practice resolves this question quite satisfactorily, at first glance. In long-term and annual planning, freight turnover in ton-kilometers and the amount of freight shipping in tons are determined by transport type. And the first indicator is directive, while the second is calculated. Freight turnover indicators have been justly criticized for being insufficiently oriented to the end national economic results and reflecting duplicate counting.

The total amount of freight shipments by transport type, however, does not reflect the real demand by the national economy for shipping since it includes duplicate shipments occurring when freight is transferred from one transport type to another. In addition, and this is no less important, the structure of freight hauled is so varied that adding it and calculating the total aggregate is unwarranted.

It is no coincidence that statistics avoid this arithmetic synthesis of tons of various shipments and that priority is given to freight turnover in planning proportions. It is, of course, an important indicator of transport operations that is indispensable in determining transport capabilities, calculating its needs for labor, materials and money, and allocating these resources among the transport types. But although the freight turnover indicator is utilized to forecast and plan the amount of shipments, in its content it is incapable of expressing the actual magnitude of the demand by the national economy for freight shipping.

An acceptable solution to the problem of determining this demand, in our view, would be establishing the quantity of freight to be transported in tons and freight turnover not by transport type, but by its functional systems, i.e., by domestic economic, domestic commodity turnover and foreign maritime shipments respectively. Separating these systems would make it possible in planning transport development to distribute materials, labor and money among them and the other sectors of the national economy in a more substantiated manner. This approach is especially needed when modernization of transport and the other basic sectors of the national economy has to become, as L. I. Brezhnev noted in his speech at the ceremonial session in Alma-Ata, the core of further economic and social development of the country.

Functional Systems

Commodity shipments are the dominant form of activity for the transportation industry. In the domestic sphere of commodity turnover, rail, domestic river, coastal, oil pipeline, gas pipeline and truck types of transport function separately and in cooperation with each other.

Characteristic for the development of transport now is its "penetration" into the very sphere of physical production. Internal economic industrial shipments are to an ever greater extent being handled by general-purpose transport, especially by truck. According to preliminary calculations, internal economic shipments accounted for 60-65 percent of the over 6 billion tons of freight hauled by general-purpose trucks in 1979.

However, industrial shipments are nevertheless not considered separately either as a whole or by industries. Organization of their accounting and planning would moreover facilitate solving the problem of centralization of industrial transport. The stumbling block is seen in the allegedly inadequate definiteness of criterion for dividing shipments into commodity and industrial, although this criterion exists. The deciding feature of industrial shipments is their being completed exclusively within one enterprise when the freight transported is not a commodity.

Freight turnover and amounts of foreign shipments in tons, as well as currency receipts are planned for sea transport.

But the national economic demand for transport in the domestic sphere of commodity turnover and for industrial shipments is not determined. To solve this problem properly, there has to be additional accounting and planning of both the shipments themselves and the production of products. Recommended as an indicator of national economic demand for shipments is the initial (customer's) shipment in tons that characterizes entry of freight into general-purpose transport by specific products list from production enterprises and bases as well as imports (without duplicate counting owing to transshipment). Internal economic industrial shipments are determined by intraplant turnover of products and should be commensurate with them, but commodity shipments are related to the amount of commodity or realized production.

But preventing the establishment of well-founded proportions in commodity shipments and demand for them in the national economy is the circumstance that commodity production is planned and accounted for not in physical, but in monetary terms. As a result, the sphere of exchange cannot be accurately outlined and final physical production is not separated out. This complicates monitoring its movement from places of production to points of consumption. It is therefore advisable to plan and account for production in physical terms by both total amount and the commodity part.

A standard products list of the freight being hauled that corresponds to the products list used when planning production and supply has to be used for all transport types in statistic reporting and planning. This standard products list would make it possible to better plan and account for the demand for shipments for a unified transport system.

Taking the transportation factor into account when siting production is very important in determining optimal proportions. In practice, an optimal system of transportation-economic links between suppliers and consumers of raw materials, fuel and finished products is usually substantiated when the schemes for development and siting of production and the technical-economic grounds for construction of enterprises are worked out. The criterion for optimal siting is minimum aggregate outlays associated with production and shipment of products-freight.

As analysis of planning data shows, the transportation factor is quite thoroughly considered during optimization of the fuel-power balance, selection of sources of raw materials and fuel for metallurgical enterprises, and siting of enterprises for the lumber, wood-working, paper and pulp industry and cement enterprises. At the same time, this question is not handled satisfactorily at all when establishing specialization and efficient loading of capacities of oil refineries, rolling mills and enterprises for production of steel reinforced concrete structures. In these cases, transportation outlays are not considered at all, which leads to cross and excessively long shipments of products.

Construction of Balances

Proportional development of transport and other sectors of the national economy is inseparably linked with maintaining intratransport proportionality based on the economically expedient distribution of shipments among the different transport types. The criterion of optimal distribution is the minimum total resulting outlays for freight shipments both as a whole and by specific types of transport. The spheres of advantageous use of the different types of transport are considered in the process, and in particular the high efficiency of pipelines for pumping petroleum instead of hauling it by rail, and the advantage of switching short-run rail shipments to trucks.

The changes in the structure of freight turnover largely reflect, as seen from the table, this progressive trend in increasing the share of specialized types of transport--gas and oil pipelines, while reducing the share of rail, although the latter continues to hold the leading role in freight shipments in the sphere of physical turnover (as percentages of the total):

Transport Type	1960	1965	1970	1975	1980
Rail	79.4	69.0	63.1	59.2	50.4
River	5.2	4.7	4.4	4.0	3.7
Sea	6.9	13.8	16.6	13.4	12.5
Oil Pipeline	2.7	5.2	7.1	12.1	18.0
Gas Pipeline	0.6	2.2	3.2	5.1	9.1
Truck	5.2	5.1	5.6	6.2	6.3
	100.0	100.0	100.0	100.0	100.0

Proper distribution of shipments also assumes optimal development of carrying capacity of the individual transport types taking into account use of progressive hauling equipment, specialized rail car fleet, containers and packets. Required for this is the systematic determination for the long and mid term of freight flows by specific polygons, directions and sections of the rail network. Methods of solving these problems have basically been worked out.

In the scientific research institutes, much practical experience has also been gained in planning comprehensive development of all types of mainline transport, but there are difficulties and unresolved problems here. The main one is the lack of territorial balances of production, distribution and consumption of the types of products that make up the freight; only on this basis would it be possible to determine optimal transport links and freight flows. This forces the institutes themselves to make rough balance estimates by economic regions, which, naturally, reduces their validity.

In the decree by the CPSU Central Committee and the USSR Council of Ministers, "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality," USSR Gosplan, jointly with USSR Gossnab and with the participation of USSR ministries and departments and union republic councils of ministers, has been charged with compiling territorial balances of production and distribution of the major types of products. In accordance with these balances, transport ministries and departments have to determine schemes for optimal freight flows for bulk freight. These balances are also extremely needed for siting productive forces and improving the territorial organization of the economy.

8545
CSO: 1829

MISCELLANEOUS

BRIEFS

NEW GIANT DIESEL ENGINES--Leningrad--The Central Scientific Research Diesel Institute has designed and manufactured a base model of a new, promising high-speed engine. Candidate for the degree of doctor of technical sciences, A. Kosyak, reports that the new family of giant diesels will have a broad range of power ratings - from 500 to 1,600 horsepower. The diesels create extensive opportunities for their use as engines for many units and mechanisms, which are used in diverse sectors of the national economy and especially in construction and road building equipment and industrial and agricultural tractors with a large per-unit rating. The institute is presently successfully testing a base eight-cylinder model at 800 horsepower. Prior to the 26th CPSU Congress they expect the model to attain its nominal rating. The research materials and technical documentation will be handed over to industry to organize series production. /Text/ /Moscow IZVESTIYA in Russian 19 Nov 80 p 3/ 8927

NEW DUMP TRUCKS--Vladivostok--The first 80-ton BelAZ/Belorussian Motor Vehicle Plant/-549 automatic dump trucks have gone out to the line of the Pavlovskiy coal pit. In comparison with previous machines of this brand, the new equipment has permitted a threefold increase in labor productivity of carting out fuel. Each of these Herculean vehicles can carry a million tons of mined materials a year to the concentration factory. The modern large freight carriers have been given to the best drivers--shock workers of communist labor Evgeniy Kushlyanskiy, Pavel Filatov, and Yuriy Maslov. Innovative work methods, and high production machines and equipment are permitting the maritime area miners to successfully fulfill the heavy commitments of the 10th five-year plan. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 23 Nov 80 p 1/ 8524

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